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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Observations on Medical Education.* By JAMES SYME, F.R.S.E., Professor of Clinical Surgery in the University of Edinburgh.

(Delivered at a Conversazione of the Royal College of Surgeons, on the 17th December 1863.)

MR PRESIDENT AND GENTLEMEN,—During the last session of the Medical Council I proposed the following resolutions, which were seconded by Dr Christison, and agreed to unanimously :—"That the Medical Council resolve to take into consideration at the next meeting the propriety of recommending a reduction in the number of courses of lectures which the regulations of the various licensing boards at present render obligatory." "That, with the view of facilitating the consideration of this subject, the General Council request to be favoured with the opinion of the bodies in Schedule (A) on the possibility and propriety of this before next meeting."

As the licensing bodies will be expected to express an opinion on this subject before the next meeting of Council, I venture to hope that some observations with regard to the points in question will not now be considered out of place; and I further trust that the circumstance of having been constantly engaged in teaching anatomy or surgery during the long period of forty years, together with the nature of my clinical duties, which, by establishing an intimate relation with students, has enabled me to become well acquainted with their feelings and difficulties, will be accepted as a sufficient apology for my present attempt.

To any one at all acquainted with the progress of medical science in recent times, it must have been obvious that a period was approaching when the load upon students' memories would become so excessive as to require some measure of relief. That the state of matters has actually arrived at this condition very plainly appears from what took place at the last meeting of the Medical Council, when, from England, Scotland, and Ireland, there was a strong

expression of desire that the attention of licensing boards should be directed to the evils which result from the present system of over-teaching. It is indeed only necessary to compare any department of the curriculum as it was thirty or forty years ago with what it is now, to perceive the enormous difference which has been gradually introduced between the former and existing amount of burden imposed upon the memory of a candidate for medical honours.

At the time I studied it, chemistry was a science that could be easily comprehended by any ordinary degree of intelligence, and all its details lay within the limits of a moderate compass; but now, instead of being merely a branch of general knowledge, it has spread over a field of such boundless extent as to require the most complete devotion of time and talent for its successful cultivation. Botany also in my day was a most agreeable recreation, unfolding the structure and use of each part in the vegetable economy, explaining the relation of flowers and fruit, and teaching the classification of plants according to the natural and artificial systems: all the information thus acquired being not only interesting in itself, but serving as a useful exercise for the memory, and preparation for more serious study. Now, the case is very different; and botany, I find, has become one of the most oppressive weights on a student's mind. Indeed, the mere terminology for describing the differences of its microscopical objects has swollen into volumes of formidable dimensions. In human anatomy the expansion of ideas has been no less remarkable. Dr Barclay used to compare modern anatomists with the stubble geese which gathered the grains left by the reapers—such as Vesalius and Fallopius, and the gleaners, under whom he ranked the Hunters and Monros. But the anatomists of our day have far surpassed the stubble geese, since, not satisfied with what was found on the surface, they have turned up the soil, sifted and scrutinized it, in order to discover if they could how it made the corn grow. In other words, by means of their microscopes, they have opened up an entirely new field of inquiry, and thus extended their researches far beyond what the wildest imagination could have anticipated. In the practical subjects there has been a corresponding development; and while we found sufficient difficulty with our three continued fevers of synochus, synocha, and typhus, my colleague, the Professor of Practical Medicine, has placed in the hands of his pupils a printed list of no fewer than eight hundred fevers! All the other departments of medicine having been enlarged in a proportionate degree, it is impossible for any one mind to comprehend the whole; and no time being left for observation or reflection, the education for our profession has become an effort of memory rather than a process of mental training. It is the knowledge of this great evil, together with the prospect of its continued increase, which has led the Medical Council to suggest the importance of devising some means of counteraction.

It is evident that there are only two sources from which relief can be obtained. These are—the regulations of licensing bodies for their curriculum and examinations; and, secondly, the conduct of courses by teachers. As no one mind can embrace the whole circle of medical science, it is obviously proper, in legislating for professional study, to provide for the acquisition of what is most essential for the purpose in view, and more especially for that part of it which can be obtained only during the period of education. Of this there are two subjects far surpassing all the others in importance. These are practical anatomy and hospital instruction. It is only by dissecting the body again and again, year after year, that the intimate and lasting acquaintance with its structure which is necessary during a practice of forty or fifty years can be impressed on the memory; while it is only in the hospital that what may be termed the personal knowledge of disease, or that familiarity with symptoms which constitutes the foundation of its diagnosis, admits of being acquired.

Now, it cannot be denied that at present, what with the multiplicity of classes, and what with the frequency of examinations, there is neither time nor freedom of mind allowed for due attention to any sort of practical study. Thus, I find that second and third year students have seldom more than one hour available for the dissecting-room, where they consequently have hardly put on their aprons before it is time to wash their hands. The remedy for this most unsatisfactory state of matters essentially requires a reduction in the number of classes; and for accomplishing this, the corporations are much more favourably situated than the Universities, since they are fettered in making changes by the vested rights of professors, and by the unwillingness of patrons to abolish Chairs in their gift.

In illustration of the difficulty thus experienced, I may relate what happened with regard to the Chair of General Pathology. This Chair, which exists in no other University or school of medicine in this country, was established by Government for the reception of that able and distinguished man whose portrait hangs over the fireplace, Dr John Thomson. When he retired, as its object appeared to have been accomplished, and as it was deemed a serious encumbrance to our academic curriculum, the following proposal was made by the late Sir Charles Bell, Dr Christison, and myself. We offered to give a course of General Pathology, not for our own profit, but merely to provide funds sufficient for paying the Professor's retiring allowance, on condition that after his death the chair should be abolished. This offer was rejected by the Town Council, to whom the patronage had been transferred, and the chair is still occupied. But the Colleges of Physicians and Surgeons, being subject to no such restriction, should not hesitate to make the changes that seem requisite; and the body over which you, sir, preside, having taken a lead in the improvement of

professional education, by adding to the extent of its requirements, especially in what relates to preparatory study, has now an opportunity of being still more useful, by pruning it of injurious superfluities.

But whatever may be the inconvenience resulting from a redundancy of classes, it shrinks into insignificance when compared with that which is caused by the present system of examination. After thirty years' experience as an examiner, I feel quite satisfied that these means of ascertaining the extent of qualification are productive of little good and very great harm, since they afford no trustworthy criterion of real knowledge, and most seriously interfere with the concentration of mind requisite for obtaining a firm grasp of it. The late Professor of Botany happening one day, while an examination was in progress, to be called away, Dr Thomson and I took his place, and examined four candidates. We put the most simple questions which any one in the slightest degree acquainted with the subject could not have had the smallest difficulty in answering, but found two of the four so entirely deficient that we were constrained to reject them. The very next day these gentlemen appealed to the Professor, and passed triumphantly. As a contrast to this case, I may mention another which occurred lately. A gentleman of good talents and studious habits had distinguished himself at one of our Universities in various departments, but especially anatomy, for his proficiency in which he possessed strong expressions of the Professor's approval. He then presented himself to an examining board in London, and, instead of passing with the distinguished honour that his friends expected, was ignominiously rejected on anatomy.

The explanation of such results is, that at the usual age of a candidate the memory is so retentive that it may be stored for a short period with almost any amount, not of real knowledge, but of answers to questions, while a desire on the part of an examiner to pass beyond the limits of such preparation may suggest inquiries very perplexing to a well-informed student. Of the two cases just mentioned, the first is an example of the former, and the second an illustration of the latter source of fallacy. In order to avoid this uncertainty, it has been proposed to give these exercises a practical character by examining on cases in the hospital. But this is worse than absurd, since, while all that is done for the good of patients may and ought to be employed for the instruction of students, humanity forbids the use of their bodies merely for such a purpose. There could not, indeed, I think, be any procedure more shocking than propping up a poor creature suffering from disease of the lungs, and hammering his chest for the recognition of diagnostic sounds as an academic exercise, or committing a fractured limb to the manipulation of unpractised fingers for the detection of its characteristic crepitus. Besides, candidates for a license do not profess to be practitioners, and therefore could not with propriety be submitted to an ordeal of this kind.

But it is the second objection to examinations which I have mentioned, or their interference with study, that demands the most serious attention. The subjects to be inquired into are now so numerous and extensive, that they are necessarily divided and taken at different periods of the student's progress, so that he is never free from the dread of a coming trial. The inevitable effect of this is, that while professing to study one thing he is thinking of another, and, from being thus distracted, instead of acquiring sound knowledge with a healthy appetite, slavishly gets up the answers which he is led to expect will be required from him. There is no year free from this disturbing influence; and the demonstrator of anatomy, Mr Turner, informs me that he has remarked a progressive falling off in the dissecting-room since the new regulations came into force, and more particularly says, that many first and second year's students assign as the reason for not dissecting at all, that they have to pass their preparatory, or elementary, professional examination. This interference with study is, if possible, still more injurious in the third year,—that most important of the whole, when the student, having gone through the elementary departments, enters upon the practical subjects of his profession. For the first six weeks—that is, from November to Christmas—he may show some interest in his pursuits; but then spring approaches with all the looming horror of an examination in anatomy, chemistry, and physiology. From that time he relaxes his attention, becomes listless in his demeanour, and broods incessantly over the impending crisis of his fate. Thus he passes on, with a no less loaded memory than unfurnished mind, to join the rank of mediocrity, beyond which it is difficult to aspire with success under the present system of medical education.

On the whole, therefore, I have no hesitation in expressing my opinion that the existing plan of examinations should be entirely abandoned. In the first place, because they are altogether inefficient for accomplishing what they profess to do; secondly, because they most seriously interfere with the acquisition of real knowledge; and, thirdly, because there are other means by which they might be superseded with great advantage to all the interests concerned.

I here allude to class examinations, which are now by many teachers conducted methodically through written questions, and record of the answers kept, in accordance with which the certificates of attendance are given. This system, if generally adopted, would afford far better evidence of professional attainments than can be obtained from the plan now followed, while, instead of distracting the student's attention from his proper object, it would prove a constant and powerful stimulus to exertion in mastering each department of the curriculum. From first to last he would thus have but the one object of qualifying himself for the practice of his profession, and not feel, as at present, that he is loading his memory with a quantity of useless lumber, which must be thrown aside before he can acquire any useful information.

I approach the subject of teaching with the consciousness of being about to tread on tender ground; but, knowing that my opinions on this subject are the mature result of long and careful observation, feel no scruple in freely expressing them.

The great object of teaching is to promote the acquisition of learning; and, unless it accomplishes this, may be regarded as useless, although characterized by the most brilliant eloquence and the profoundest science. It has been too generally supposed that the mere enunciation of facts and opinions constitutes teaching; but this may require for its reception only an exercise of memory, while learning is an act of the mind that may be likened to the digestion and assimilation of bodily nourishment. The teacher should excite and maintain the appetite for this mental food, and supply it in such quantity, quality, and order as may be most conducive to the end in view, taking care not to oppress the memory with unconnected crudities, or confuse it with conflicting theories. He should devote all the talent he possesses to the subject of his tuition, and cultivate it to the utmost of his power, so as to take a position among fellow-labourers in the same field, that may command respect for the opinions which he expresses. But, in addressing his pupils, he should entirely forget himself, and think only of the wants it is his duty to supply. It is to be feared that all teachers do not pursue this course, and that some of them, making the duties of instruction subservient to the gratification of their own self-esteem, or the indulgence of peculiar fancies, not only mispend the time of their pupils, but withdraw their attention from the true path that leads to eminence.

Having now endeavoured to explain the evils which result from a redundant multiplicity of classes, the present system of examinations, and the erroneous conduct of teachers, I may say a few words with regard to the means that might be employed for remedying these imperfections. In the first place, I think it should be made quite imperative to pass the examination for preliminary qualification before commencing the strictly professional course; secondly, I would prohibit this course from being commenced before a certain age; thirdly, I would require four years' study in some school or schools possessing a large hospital with ample means for practical anatomy; fourthly, I would require attendance upon all the classes that seemed really necessary; and, fifthly, I would demand from every candidate for a diploma or degree a certificate from his teachers that he had afforded evidence of due proficiency in their respective departments.

But, while trusting so much to the teacher, I would not, as at present, leave him entirely to himself. It is, unhappily, too true that, both within and without the walls of universities, there has been—and, no doubt, will be taught—not only much nonsense, but doctrines positively injurious in the practice of our profession,—the understanding seeming to be that a teacher, once recognised, should

be allowed perfect freedom in regard to the matter of his instructions. Instead of this too-confiding system, I would have every lecturer called upon from time to time, by the body from which he derives authority, to produce a syllabus of his course; and if it should thence appear that he loaded the memories of his pupils with undigested or undigestible details, or allowed an unruly hobby to carry him away from the field of practical utility into the regions of unprofitable speculation, or, still worse, taught doctrines not conducive to sound practice, I would endeavour to correct the evil of his ways by remonstrance, by censure, or, if necessary, by deposition.

Such being the views in regard to medical education which experience and reflection have suggested, I leave the members of my profession to determine how far they merit approval, and how far they admit of application in practice.

ARTICLE II.—*Naval Medical Contributions.* No. III. By ALEX. E. MACKAY M.D., R.N., F.R.S.E., M.R.C.P., etc., etc.

Dysentery—continued.

THE case which I am now about to give, is one in which active disease set in in a constitution severely shaken by long residence in the climate, the patient having suffered only a few weeks previously from an attack of acute hepatitis:—

John Bailey, æt. 32, quartermaster, H.M.S. Minden, had been discharged from hospital “cured” of hepatitis, about three weeks before his admission with the disease which carried him off. He was a fine, strongly-made man, steady in his habits, but such an objection had he to the restraints of an hospital that he had concealed his illness for some days. On his admission into hospital, on the 26th January 1852, the following report was made:—“On the morning of the 23d current was seized with purging and griping, and with pain at anus of a burning character. Was called very frequently to stool during the 23d and 24th. Yesterday, the calls to stool became rather less frequent, but he observed ‘blood and slime’ in the dejections. To-day, he has been between twenty and thirty times at stool, the stools being scanty, serous, and containing blood. A ‘heavy’ pain in the hypogastrium, and a burning pain of anus, are complained of. Belly soft, and moderate pressure is pretty well borne; anorexia; thirst; skin cool; pulse hurried, rather full; tongue furred. Has not received any medicine, as he only returned on board the Minden last night, after an absence of three days on shore.” Leeches and fomentations were applied, and calomel and opium administered until the system was affected, but without bringing him any relief. Opiates at bedtime, and vegetable and mineral astringents were prescribed, and opiate suppositories, and opiate and astringent enemata exhibited, but all

to no purpose. The liquor morph. hydrochlor., given in gradually increasing doses, seemed to have a wonderful influence for some time in arresting the urgency of the symptoms; and in large doses, given three or four times in the twenty-four hours, reduced the number of stools to three or four in that period of time. An aggravation of all his symptoms, however, suddenly set in, attended with great pain, and almost constant sanguineous discharge from the anus; and this speedily becoming complicated with pain at the epigastrium, extreme tenderness over the abdomen generally, and almost constant vomiting, he sunk exhausted, after being nearly two months in hospital.

Secio Cadaveris.—Twenty hours after death. *Body.*—Well formed, but much emaciated. *Head.*—Not examined. *Thorax.*—The pleura of the right lung was adherent posteriorly by a rather strong lymph. band. The pulmonary tissue was quite healthy. The left lung, pericardium, and heart were normal. *Abdomen.*—The surface of the intestines presented an inflammatory blush throughout. In the region of the cecum lymph had been effused, and had bound, rather firmly, the visceral to the parietal peritoneum. There was also an adhesion of a similar nature, but less firm, between the concave surface of the liver and the commencement of the transverse arch of the colon. The stomach and the intestinal canal having been laid open, the former organ was found to present no appearance of disease. The mucous coat of the duodenum exhibited in a few places slightly injected patches. The jejunum was healthy. The mucous coat of the ileum, throughout a great portion of its extent, presented patches of injection, which increased both in extent and intensity towards its termination, where it was somewhat roughened. The mucous and submucous areolar tissues of the caput cecum coli were completely gangrenous; what remained of the former consisting of black shreds, whilst the latter was so soft and pulpy, that in removing the intestine, although no force was employed, the finger accidentally perforated it. The mucous coat of the colon was studded with ulcers of various sizes, and in one or two places the entire calibre of the gut, to some extent, was denuded of this membrane. The rectum was one mass of disorganization, the mucous coat being completely gone, and the submucous areolar tissue extremely thickened and dense. The liver was of normal size. A small punctured spot was present on its convex surface, and on cutting into the hepatic substance immediately underneath this part, a yellowish gritty deposit was found to extend to the depth of about the one-eighth of an inch. A portion of this substance being removed, and submitted to microscopical examination, showed granular matter, and amorphous transparent masses, intermixed with oil-globules. The spleen and kidneys were healthy.

This case is interesting in several respects. In the first place, there was from the commencement of the attack great severity of the symptoms in connexion with the rectum. The morbid changes

which were going on there were marked by an almost constant sanguineous discharge from the anus. No language can express the agony which is occasioned by the straining under these circumstances. In this case the sufferings were so fearful, that the poor fellow constantly prayed that death might relieve him from them. They were only lulled by large opiates. In the second place, there was that form of inflammatory disease of the cæcum called typhlitis. It was the extension of this disease to the peritoneal coat of the intestine, and its subsequent spread, which was the immediate cause of death. And, thirdly, there were the traces of inflammation of the liver, for which he had shortly before been under treatment. That attack was rather a severe one, and required repeated leeching, with other treatment, to subdue it. Whether it had any influence or not in afterwards inducing the dysenteric attack, it is, of course, extremely difficult to say; but the natural tendency of such a seizure being to occasion functional derangement of the liver, and the probable outpouring of acrid and vitiated bile, than which nothing is more irritating to the intestinal mucous membrane, it may not unreasonably be suspected of having had some share in the matter. It seems to strengthen this suspicion somewhat, that the earliest symptoms of the disease were accompanied with that severe scalding at the anus which is so characteristic of bilious diarrhœa.

The association of hepatitis with dysentery has been frequently noted. It has also been remarked, that in hot climates, where there is more frequently a redundancy than a suppression of bile in the earlier stages of hepatitis, the outpouring of it in its vitiated condition has given rise to such dysenteric symptoms, as have masked the progress of the affection of the liver. The result of this has been that when the hepatic symptoms afterwards assumed greater prominence, the dysentery has been erroneously looked upon as the primary disease.

The case I am now about to give is full of interest. A man subject to ague, and under treatment for stricture, is seized with hepatitis. This being got under, he is attacked with nephritis, the more urgent symptoms of which being subdued, dysentery supervenes, and carries him off in three weeks. The cachectic state of this man's system was such as to favour the development of the most aggravated pathological changes of epidemic dysentery:—

Joseph Clements, æt. 43, A.B., was admitted into the Royal Naval Hospital at Hong-Kong, on the 26th June 1852. The following is a copy of the "case" sent with him:—" ——— was admitted to the sick list on the 24th May, for the cure of stricture of the urethra. On examination, two were found to exist, one in the membranous, the other in the bulbous, part of the canal. The former is nearly overcome, but the latter will not yet admit entirely through it a No. 1 catheter, although it is daily yielding to instrumental pressure. Yesterday morning, he complained of much pain in the

right hypochondrium, extending into the epigastric region, confined chiefly to the site of the rectus muscle, increased on inspiration, of a cutting shooting character, and extending into the right mammary region. No uneasiness elsewhere. The tongue was large, thickly covered at the base with a brown fur; much thirst present; has had no rigors nor flushes of heat; skin cool and moist; pulse 90, full, compressible; bowels opened last night, stool of a light yellow hue; urine clear, passed without difficulty; anorexia; no nausea; no cough. Twenty-five leeches were applied over the seat of pain, and the parts afterwards well fomented, and a pill, composed of pil. hydrarg. gr.v., opii gr. $\frac{1}{4}$, antim. pot. tart. $\frac{1}{8}$, was given every four hours, with sago for diet. Much relief followed the application of the leeches, and subsequent fomentations. At 4 P.M., he had a shivering fit which lasted for about a quarter of an hour, and was succeeded by pyrexia, and followed by diaphoresis. At 8 P.M., the pain in sites before indicated returned with considerable severity, and lasted for about an hour, since which time he has been pretty easy. To-day little pain is felt by pressure being exercised over situation indicated yesterday. Considerable bulging of the parietes of right side of chest, in submammary region, has taken place. Much thirst is experienced; tongue thickly furred, moist; no nausea; skin cool, acting freely; pulse is somewhat accelerated, of moderate volume and force; bowels not moved since evening of 24th. To have $\mathfrak{z}$ ss. of ol. ricini at once; to continue the pills. This man suffered from ague two years ago; from that time until now, with the exception of the urinary affection, he has been in health. He is now somewhat reduced in flesh, and complains of general debility."

On his admission into hospital, at noon of the 26th, the following report was made:—"Surface of body of moderate temperature, soft, moist; pulse hurried, not of volume or force; tongue thickly furred at centre, moist; considerable thirst; anorexia; bowels freely moved. When lying quiet in bed he feels easy 'for the most part.' At times he has a shooting pain at right side of epigastrium, and pressure there, especially at a spot about an inch to the left of the cartilages of the ribs in that region, readily causes considerable pain. Decubitus performed with greatest ease on back. When attempted on right side he has increase of pain in the site just now indicated. Deep inspiration also causes aggravation of pain. He has occasionally a shooting pain from right hypochondrium to top of right shoulder, up the front of the chest. Percussion is dull from a finger's-breadth below right nipple to about the same distance below lowest cartilages of the ribs, and is also dull close to the seat of pain in the epigastrium. Urine voided in a very small stream, and its escape is attended with some amount of pain in the left side of loins. He has experienced more or less difficulty in passing water for seven or eight months past." Twenty leeches were applied over the epi-

gastrium, which was afterwards assiduously fomented. He was ordered a saline diaphoretic, composed of liq. ammon. acet., vin. antim. pot. tart., et nit. potassæ, and lemonade was given him for a drink. Under this treatment the hepatic symptoms gradually disappeared. A blister was applied over the seat of pain on the 1st July, and on the 4th he was permitted to get out of bed, all pain and uneasiness being quite gone. Attention was now paid to the state of the stricture. Catheterism was commenced on the 7th, beginning with a No. 1 catheter, and continued every second day. On the 22d July the report is:—"No. 2, and subsequently No. 4, catheter passed into bladder." On the 24th, symptoms of nephritis are noted:—"He says that he felt chilly during the night, and that in the middle watch he was seized with pain in the left side of loins. Surface of body is of augmented temperature; skin dry; pulse 126, not of volume or force; thirst; a little nausea experienced this morning. He was called to void urine repeatedly during the night, and states that as the urine flowed so he obtained relief from the pain. Urine came away in a small stream; bowels confined; pain above posterior part of crest of left ileum, increased on pressure, and said to be deeply situated. He had a pain in the same place five or six months ago, when he first had difficulty in passing water." The bowels were freely acted upon by a purgative, and twelve leeches were applied over the seat of pain, which was afterwards fomented. The nephritic symptoms were readily subdued, but he always complained of a dull pain in the loins. The urine was loaded with pus globules, of specific gravity varying from 1.015 to 1.020, and of acid reaction.

When all active symptoms connected with the kidney had fully subsided, catheterism was again had recourse to, and a No. 6 catheter ultimately passed with facility into the bladder. The 2d of August was the last date on which catheterism was employed: he was apparently progressing tolerably favourably, using the hip-bath night and morning, but still complaining of a little pain in left side on micturition, when, on the 12th, he was seized with some shivering, followed by heat of head and diaphoresis; within the previous twenty-four hours he had voided urine about twelve times. This passed off, and he again appeared to be progressing, when, on the 20th, the following report was made:—

"His bowels have become 'loose' within the last twenty-four hours. He has been called to stool twelve or thirteen times within that period. Evacuations fluid, slimy; uneasiness of belly; some straining; still called to void urine frequently; water passes in a small stream, with some straining; no pain complained of when pressure is made on prostatic body and neighbourhood; urine still contains pus globules." Remedies were now directed against the dysenteric symptoms, which were not, however, at this time very severe. At first, the compound rhubarb draught, which had been found efficacious in the milder forms of the disease, was used, but

the stools continuing to be four, five, and six, in the twenty-four hours, with some griping and straining, a vegetable astringent was prescribed; this was of no avail whatever. On the 30th, the report is:—"Called often to stool during the night; dejections last voided consist of bilio-feculent matter, with muco-sanguineous admixture; considerable griping, and pain in line of colon on pressure; pulse, 105, not of volume; thirst." A pill composed of a grain and a-half of calomel, and half a grain of opium, was now ordered every sixth hour, and the belly was fomented frequently. This treatment was stopped two days afterwards, on account of the frequent discharges at stool, and he was put upon the sulphate of copper and opium instead; this, however, had to be suspended on account of its causing nausea and vomiting; acetate of lead and opium took its place, and was followed by gallic acid, but all to no purpose; the stools continued to average eight, ten, and twelve, in the twenty-four hours, the dejections being chiefly muco-sanguineous; great debility set in, and he sunk exhausted on the morning of the 8th September.

Sectio Cadaveris.—Twenty hours post mortem; thermometer, 82° Fahr. *Body*.—Well formed, but much emaciated. *Thorax*.—The right lung was bound to the thorax by numerous strong bands of lymph. The pulmonary tissue was quite healthy; the left lung, which was quite normal, was free over its whole surface, excepting at one point at its apex, where it also was united to the pleura costalis by a rather strong band; the heart was somewhat flabby, but otherwise healthy. *Abdomen*.—The stomach, duodenum, and jejunum, presented no points of interest; a small diverticulum was prolonged from the latter part of the intestine. The mucous coat of the ileum was the seat of considerable vascularity, and towards its termination it presented a roughened appearance. The large intestine, from its commencement at the ileo-cæcal valve, was found to be in an advanced state of disorganization, and this condition extended to the anus. The mucous coat was entirely gone from various large portions of the colon; and of what remained, by much the greater part was in the shape of flocculent gangrenous shreds, while here and there small patches of tolerably healthy-looking membrane were found. The submucous areolar tissue was thickened and softened, so that, in removing the intestine, although care was observed, it gave way in two places. The mesenteric glands were considerably enlarged. The liver, which was of normal size, presented on its convex surface the remains of two previous attacks of disease. In the one instance, apparently the most recent, the remains of diseased action existed in the form of lymph bands, which bound the liver to the diaphragm; while, in the other, the surface of the liver near its free edge was deeply marked with a long puckered indentation, presenting very much the appearance of a cicatrix; the hepatic tissue was tolerably healthy. The right kidney was large, and considerably congested;

its structure was normal. The left kidney was much diseased; the pelvis contained a small quantity of very light-coloured pus, and the tubular portion of the kidney was supplanted to a great extent by granular deposit. The pubic bones, with the organs of generation, the bladder, and the rectum being removed *en masse*, the urethra was now laid open, and the seat of stricture examined. It was situated at the bulbous portion of the urethra, at which point the walls of the canal were somewhat thickened, and its calibre consequently diminished; in conjunction with which there was a valvular flap of mucous membrane, which was raised from the lower surface of the urethra, and formed somewhat of a bridle stricture across the canal. The bladder was the seat of considerable disease, the muscular fibres being much hypertrophied, and the whole viscus thickened and diminished in capacity.

In the case of the man Bailey, given above, we have an example of typhlitis occurring as a complication of dysentery. This is by no means a very frequent occurrence. As a rule which has not many exceptions, the morbid changes which occur in connexion with dysentery diminish in severity as we proceed from the rectum towards the cœcum; when we add to our knowledge of this fact, the consideration that tenesmus is one of the most urgent symptoms in the very earliest stages of that disease, we have fair grounds for venturing the suggestion that the earliest pathological changes, in connexion with dysentery, may commence with the lowest portion of the great intestine. In order to show how the most severe inflammation of the cœcum, running on even to gangrene, may exist without exciting a single dysenteric symptom, I introduce here the following case of inflammation of the coats of the cœcum and pericœcal cellular tissue.

Mr C. D. M., æt. 20, midshipman, a fine, spirited, healthy young gentleman, was amusing himself with a messmate, sailing in a small boat on the Canton River, when the boat capsized and they were both thrown into the water. They managed, while swimming, to right the boat again, got into her, baled her out, and were again capsized on their way back to the ship; again they righted their boat and pulled on board; they were upwards of an hour in their wet clothes. On the following day, the 20th July 1851, *Mr. M.* was placed on the sick list with pain in the right iliac region, much increased on pressure. From the "case" that was sent to hospital with him, it would appear that on the 27th the pain extended over the abdomen, and was accompanied with irritability of stomach, constipation, and general pyrexia. Leeches were applied to the seat of pain, and afterwards a blister was applied over it. His bowels were acted upon by calomel, which was continued so as to affect the mouth; under that treatment the peritonitic symptoms are said to have completely subsided. He was sent down to the Naval Hospital at Hong-Kong on the 4th of August, on account of the confined accommodation on board his own ship, and the great

heat in the river. On his admission into hospital, which was at 6.30 P.M., the following note of his condition was made:—"Countenance flushed; lips red; surface of body of considerably augmented temperature; skin rough and dry; pulse 96, not of volume, but of some force; thirst rather urgent; tongue thinly furred; whitish in centre; dry, and reddish at tip. Decubitus performed most easily on back, and tendency to bend thighs evinced; when decubitus is attempted on left side there is some pain caused in extreme right of epigastrium; abdominal muscles resist pressure over their entire extent, and pain attends pressure between lowest ribs and crest of ilium on right side; pressure close to twelfth rib on that side, in lumbar region, is also the cause of some amount of pain; deep inspiration causes a slight increase of pain in sites indicated; respiration is free, but slightly accelerated; percussion elicits normal sounds in hepatic region and vicinity, and in site of pain, first indicated, is clear, somewhat tympanitic even; bowels have been moved three times to-day; stools fluid; when he was first seized, bowels were frequently moved, he says, and he had griping in the line of the colon; urine voided freely, and in normal quantity; anorexia; he is very weak." Twelve leeches were applied over the affected part, and fomentations repeatedly employed. Calomel, with compound antimonial powder, was given until the mouth was slightly affected, when it was stopped; on account of considerable pain on pressure continuing, the leeches were re-applied on the 5th. On the 6th, pressure over the abdomen was rather better borne. He was taking the liq. acet. ammon, with nit. potass. and camph. mixt., at this time. At 2 A.M., on the morning of the 7th, the calomel and antimony and the saline diaphoretic were stopped, and at the morning visit, on the following day, the following report was made:—"9 A.M. Decubitus performed on left side without pain. Pressure over abdomen does not cause pain anywhere, but some 'uneasiness' is experienced on right side when firm pressure is made. Belly soft, and not resisting pressure. Bowels moved once. In the middle watch he became very hot, and afterwards perspired copiously for a short time. Forehead has been hot during the greatest part of the night. Pulse is 114, of some force; skin at present cool and moist; tongue clean, moist; considerable thirst; less tickling of throat (he had complained of this at 2 A.M.); uvula is redder than natural, and somewhat elongated; no pain of forehead, nor giddiness, now complained of." He was ordered a vinegar-and-water gargle, and lemonade for drink; poultices and fomentations were constantly applied over right iliac region. On the 8th, it is stated that he had been restless since 11 P.M. of the previous night; prior to that time he had slept for four hours. There had been considerable increase of temperature, as before, in the middle watch. Bowels were once moved during the night; pulse full, 102; tongue thinly furred and dry. He was now put on an allowance of wine; he was also ordered two grains of quinine, with ext. gentian, three times daily.

The reports now continue as follow:—"10th. Has remained in much the same state; sago, with beef-tea, and small quantities of wine have been administered at intervals. In the middle watch there was some increase of heat of surface, and of force and volume of pulse; diaphoresis also took place; bowels moved three or four times in the last twenty-four hours." On the 12th, the report is—"No change is manifested requiring note; takes diet as ordered; bowels moved two or three times during the night; stools watery, of light yellow hue; urine voided in natural amount, of light colour, sp. gr. from 1·010 to 1·015." (During the nights of the 12th and 13th there were great electrical disturbances of the atmosphere, and at this time the heat was very great, there being much moisture, with the thermometer at 90° in the shade.)

On the 13th, the report is—"He slept a good deal yesterday, and remained easy and quiet throughout the day. Early this morning slight mental aberration was manifested when he lay quiet, but on being disturbed or spoken to he became collected. Pulse rose to 114, and some increase of heat of body took place. Since 7 A.M. he has been collected, and has slept pretty soundly for some time. Pulse continues much accelerated (114), and there is still increased heat of surface of body. Tongue dry; thirst great. Within the last few days a lichenous eruption has come out very abundantly over the body. Since yesterday morning many of the phlyctenulæ have become filled with purulent matter, and have evidently been attended with much irritation."

On the 14th—"He continued in an unchanged state throughout yesterday. For a time the pulse fell a little. He has been more or less delirious during the greater part of the night, but has slept this morning, and is more collected, and readily replies to questions. He is very much reduced. Numerous pustules have discharged their contents, leaving small ulcers. Very large boils, one or two like carbuncles, have here and there formed on the back. Bowels four times moved yesterday. Last stool feculent, and of some consistence. Urine voided in considerable quantity. Skin has been moist at times. Pulse at present 120, rather feeble."

He was taking wine in large quantities at this time. The pulse continued much accelerated. He was frequently delirious during the day. In the evening the delirium became more marked, and thereafter he lay in a low state. After midnight stupor set in, the circulation began to fail in the hands and feet, and he expired at 2.15 A.M. of the 15th August.

Section Cadaveris.—Ten hours post mortem; thermometer, 85° Fahr. *External Conformation.*—Chest not well developed. Sternum rather prominent. Body extremely emaciated. Surface covered with a copious eruption of lichen, interspersed with pustules in various stages of progress, and with furunculi, some of a livid colour, others in a sloughing state. One large slough is situated over the acromion process of the right scapula. Since death a considerable

discharge of blood has taken place from the rectum. *Head*.—Not examined. *Thorax*.—The viscera in this cavity were healthy. *Abdomen*.—In the right iliac fossa, and extending into the right lumbar and hypochondriac regions, a large collection of grumous and coagulated blood was found, in which were floating shreds of gangrenous cellular tissue. The stomach presented no abnormal appearances. The duodenum was deeply tinged with bile. The jejunum and upper portion of the ileum were perfectly healthy. About a foot from the termination of the ileum the “*glandulæ solitariae*” began to show some enlargement, and near the ileo-cæcal valve they were manifestly enlarged, and one large cluster of “*glandulæ agminatae*” was superficially ulcerated. The mucous coat of the caput cæcum coli and ascending colon, although considerably injected, was not so much diseased as might have been expected; but the submucous areolar tissue was much thickened and diseased, and, about two inches from the ileo-cæcal valve the posterior wall of the intestine was completely gangrenous, and a perforation existed sufficiently large to admit the point of the finger. The whole of the cellular tissue external to the gut at this part was completely broken up and disorganized. Along the peritoneal surface of the ascending colon lymph had been effused, and had bound down to the intestine a portion of the free edge of the liver, to a small part of the substance of which the inflammatory action appeared to have spread, as it was at this part in a softened and diseased condition. The remainder of the liver appeared healthy. The spleen was much enlarged and spongy. The kidneys were healthy.

The nature of this case, although rendered exceedingly clear by the post-mortem appearances, was involved in a good deal of obscurity during the poor boy's life. In the first place, the very nature of the affection itself, and the progress which the disease had made, were less easily ascertained, from the circumstances that the patient had been under treatment for fourteen days before he was admitted into hospital, and that, from the report of the “case” sent with him, there was reason to believe that the inflammatory symptoms which presented themselves on his admission were occasioned by the exertion of travelling from Whampoa to Canton, and were not a continuance of the original attack. Then, again, these inflammatory symptoms left him three days after his admission, decubitus being performed on the left side without pain, there being only some “uneasiness,” on firm pressure, remaining on the right side. The belly was soft, and did not resist pressure. Gangrene had probably set in. At this time also, regular nocturnal febrile exacerbations took place, leading to the suspicion that the case was complicated with remittent fever,—a very natural supposition, considering the nature of the locality from which the patient had been sent. An eruption of sudamina, lichen, pustules, phlegmons, and almost anthrax, took place also about this time, creating such irritation as

induced the belief that much of the acceleration of pulse was attributable to them; and, finally, the nature of the stools gave no indication of a diseased intestinal canal.

The disease presented the character of a twofold inflammation,—viz., inflammation of the coats of the cœcum and inflammation of the pericœcal cellular tissue. The ushering in of the seizure with purging and severe griping in the course of the transverse colon leads to the conclusion that the process of perforation took place from within outwards. This is in accordance with the description which Craigie (*Elements of Pathological Anatomy*, pp. 632, 633) gives of the progress of these cases. According to his views, the disease commences with enlargement and inflammation of the glands and follicles of the cœcum, which, running on to ulceration, involves the submucous tissue and peritoneum, and from thence there is an extension of the inflammation to the pericœcal cellular tissue. If we may judge by the general peritonitic symptoms, it took seven days for the disease to pass from the mucous coat of the cœcum to the peritoneum.

It is a suggestive fact, that in a locality where dysentery is peculiarly endemic, inflammation should attack a portion of the large intestine, and run its whole course to gangrene without inducing a single dysenteric symptom. Physiological research, as well as the analogies derived from comparative anatomy, would lead us to refer to the cœcum a somewhat special function,—and it may be in virtue of this that this portion of the intestine is liable to certain peculiarities of functional and structural derangement. But, be this as it may, it is interesting to observe that this inflammation, occurring as it did, was limited almost entirely to the cœcum and ascending colon, and that the only bowel affection which existed as a symptom during life, was an irregular form of diarrhoea.

It is also interesting to observe that the only pathological condition with which we are acquainted as being most commonly associated with intermittent fever, ague-cake, was present in this instance. If the causes of ague and dysentery are identical, we ought surely to have had dysentery in this case.

It would appear from the Statistical Returns of the Health of the Navy for 1857, that the majority of medical officers serving in China consider ague and dysentery as depending on the same cause. Dr Bryson says, "The experience of many years has thrown little or no light on the true character of the cause or causes of fever and flux in China. The majority of the naval medical officers who have been employed on the station seem to regard the two diseases as depending on the same cause, but no sound proof of this has yet been adduced. It is true that the diseases generally make their appearance at the same time, and, with the exception of chronic or recurrent cases, they disappear together; from this, therefore, it may be safely inferred that if there be more causes than one, they are at all events simultaneously developed. Another argument

which has been thought to favour the theory of one cause, is the frequent alternation of the two diseases in the same person ; when, for instance, the fever is forced to yield to quinine, the flux comes on, and when it gives way, then the fever returns. In this manner a see-saw is kept up until the constitution gives way, when one disease, generally dysentery, finally displaces the other, and takes sole possession of its victim."

It will be gathered from a former part of this paper, that I am entirely opposed to the opinion that the two diseases depend on the same cause. We know that sporadic dysentery may attack a person in the middle of the Atlantic, where there can be no suspicion of malarial influence ; and we know that persons may suffer for years from ague, and reside in malarial districts, without having a single symptom of dysentery. It is true that, during the hot season in the Canton River, fevers and dysentery become epidemic, and that during the cold season they disappear in great measure. But it must be remembered that while, in malarial districts, a high rate of temperature, such as that which obtains during the hot season at Canton, is the very condition which is calculated to generate the agents operating in the production of malarial fevers in their greatest amount and intensity, it is also the condition which in non-malarial districts, when alternating with cold, and especially if accompanied with moisture, is provocative of the most ordinary form of sporadic dysentery. When sporadic dysentery is caused, as according to Hardy and Behier, it may be, by the sudden immersion of the body when violently heated into cold water, the process by which the disease is induced is identical with that which obtains when the heated body is exposed to a current of cold or cool air. In a cachectic subject the causes of disease will operate with more certainty and greater violence than in a person of robust health, and in this way the person who has been exposed to the deleterious influence of malarial poisoning will be more liable to be virulently acted upon by alternations of heat and cold. But it may be said that a high rate of temperature may or does exist within the tropics, with moisture and alternations of heat and cold, and dysentery may be almost unknown there. I do not know of any such locality, but even should it prove that such places do exist, it will also be necessary, in order to complete the argument, to prove that the exposure has been submitted to without the deleterious results following. The body may be heated, and the cold water may be there, but unless the body be immersed in the cold water there is no reason why dysentery should be contracted.

There can be no question of the sympathy which exists between the skin and the intestinal mucous membrane. I have already quoted Rokitsansky as an authority for the fact, that suppressed cutaneous exhalation will and does cause what he calls catarrhal irritation or inflammation of the intestines. In the ushering in of the hot season in the Canton River, we have not only all those

oscillations which are so liable to occur between these two great emunctories, the skin and the intestinal mucous membrane, but we have in addition a liability to that form of functional derangement of the liver which is accompanied by an outpouring of acrid bile into the intestines, and which, acting upon the already irritable or inflamed mucous membrane, is well calculated to light up any degree of inflammatory action. It must be consistent with the experience of every medical officer who has served within the tropics, that, as he passed from the temperate into the tropical zones, cases of bilious diarrhoea, accompanied for the most part by much griping and scalding at the anus, became very frequent, it might indeed be said, almost epidemic. And on leaving England for the Mediterranean in the summer season, the same affection will be found to make its appearance after leaving Gibraltar. In weakly and cachectic subjects this diarrhoea very readily runs into dysentery; and if this be so in such latitudes, and where no malarial influences exist, how much more likely are they to occur in such a locality as the Canton River, where every condition favourable for their development exists in the most aggravated degree.

I have already, in a former part of this paper, referred to that derangement of the general functions of the body which is induced by long exposure to malaria, the effect of which is to give that cachectic aspect which obtains so much amongst the inhabitants of malarial districts. Of the various functions so affected, that which is particularly liable to be impaired is the function of digestion. It will surely not be considered an overstraining of the argument if I refer some of the cases of dysentery which occur during the hot season in the Canton River to the attempt to impose on an enfeebled stomach the task of digesting salt pork and similar indigestible substances, for which it is utterly unfitted. The passage of these in an undigested state through the irritable intestinal canal cannot fail to be provocative of a large amount of mischief. We have abundant experience of the dangers of allowing the smallest portion of solid animal food to be eaten by patients labouring under dysentery, and in our treatment of the most ordinary forms of diarrhoea, the very first rule we lay down is abstinence for a time from animal food. And yet in a locality where all the conditions are most favourable for weakening the assimilating powers, and where we know there is engendered a peculiar irritability of the intestinal mucous membrane, we diet our men exactly in the same way as we diet those who may be serving in the Baltic or the North Sea. Surely the teachings of disease do in some measure point out to us the direction in which our efforts should be made to guard our men from the most ordinary of its modes of invasion. So long as we are determined to make no compromise with climate, but in all latitudes and under all circumstances continue to maintain one undeviating system with the principal functions of the body, however opposed that system may be to reason, experience, or the teachings of

science, it is a mere waste of time to speculate on the more subtle and intangible causes of disease.

I can find nothing in my notes with regard to the alternation or see-sawing of ague and dysentery. I have cases where the dawn of a dysentery was complicated with an ague, and where a spurious form of ague supervened during an attack of dysentery, but I have never seen any cases where the ague, having been checked by quinine, dysentery supervened; and on the dysentery being checked, the ague recurred, and so on. In persons who have been long exposed to the action of malaria, and especially in persons who are subject to ague, it is wonderful how slight an irritation will induce an attack. I have seen an ordinary cynanche occurring in the South Pacific Ocean, midway between New Zealand and Cape Horn, induce an attack of ague. A chill, a fit of indigestion, a debauch, the irritation of a catarrh, or of an ordinary boil, may in the subject of ague induce a seizure; and it is, no doubt, to the irritation of functional derangements which in themselves are so slight as not to be very appreciable, that we owe many of the attacks of ague which occur in the subjects of this disease when at sea or in localities where there can be no possible suspicion of the existence of malaria. And if this be so, it is not difficult to perceive how the irritation occasioned by the onset of dysentery in a locality where the malarial poison abounds, may readily induce an attack of ague. That the dysentery may be aggravated by this attack is comprehensible enough, but that it is likely to be suppressed by it, to break out afresh when the ague which has kept it back has been checked by quinine, appears to me to be irreconcilable with what we know of the pathology of the disease.

But while dysentery may in this way induce an attack of ague, ague may also very readily induce an attack of dysentery. The internal congestions which attend upon the cold stage of fevers are liable to react with peculiar violence upon the intestinal mucous membrane. In the epidemic "seven-day" or relapsing fever which prevailed in Edinburgh in 1843, there not unfrequently occurred melæna of a profuse and very alarming character; and this also was not an unfrequent event in the epidemic remittent fever of Hong-Kong in 1850. But these congestions are liable to run on to inflammation; and hence, as Murchison tells us, diarrhoea and dysentery were among the chief causes of death in the relapsing fever. Dysentery and typhus have prevailed together, and occasionally complicated one another in some of the Irish epidemics, and in the French army in the Crimea; and the lesions of dysentery may co-exist with those of pythogenic fever. But if this be true of the specific fevers, which are rarely marked by the extreme severity or the protracted nature of their cold stage, how much more may it apply to periodic fevers, and especially to those which occur in such localities as the Canton River?

It is in either of these ways, then, I am inclined to think, that

the alternations of ague and dysentery take place,—either by the irritation in the early stage of dysentery inducing an attack of ague, as in the first instance, or, as we have just seen, by an attack of ague so reacting on an enfeebled intestinal mucous membrane as to induce congestion and ultimately dysentery. The febrile condition proper to the dysentery itself may so modify the ague as to alter its type entirely, or it may supplant it altogether. But so far from the dysentery being checked or temporarily suppressed by the ague, the effect which is most likely to follow such a complication will be to add to the already congested and inflamed state of the intestinal mucous membrane, and so to exaggerate all the morbid processes which belong to the disease.

The following case is one in which a spurious form of ague complicated a rather severe attack of dysentery :—

Thomas Lewis, æt. 24, ordinary seaman, belonging to the Honourable East India Company's steamer *Phlegethon*, was placed on the sick list of that ship on the 31st August 1851, "complaining of having had frequent calls to stool during the past night, attended with griping pain in the lower belly; slight tenesmus. The dejections consisted of mucus and blood, principally the latter."

On his admission into hospital the following note was made :—"Sept. 3d, 7.30 P.M.—Considerable pain of abdomen. Bowels moved frequently, stools muco-sanguineous. Pulse hurried, not of great strength. Gums somewhat whitish, in small patches."

Leeches to the abdomen. Fomentations, and the administration of calomel and opium was the treatment employed. Barley water for drink. Low diet.

On the 5th, the gums not being more affected by the mercurial than when he came in, two drachms of mercurial ointment were ordered to be rubbed into the thighs night and morning. On the 8th the calomel and opium was stopped, but the mercurial frictions were continued. At this time the stools continued to be frequent, and after 8 P.M. of the previous evening he had had as many as seven or eight. Previous to that hour he had had in the evening great heat of surface, followed by profuse diaphoresis. The stools were chiefly sero-sanguineous. On the morning of the 8th, the same phenomena were repeated, and in the evening they again recurred. On the morning of the 9th, he again had an accession of great heat of surface, followed, as before, by profuse diaphoresis, and this was repeated on the same evening. On the morning of the 10th, they did not present themselves, but they came on in the afternoon. After that there was no return of these spurious aguish attacks.

In the meanwhile the mercurials, being entirely inoperative, were stopped and astringents had recourse to. He was also ordered wine.

The vegetable astringents caused nausea and vomiting.

Previous to their administration the stools had been sero-sanguineous. On the evening of the day they were first prescribed (the 9th) it is noted,—“Bowels moved six times. Two stools seen

were fluid, feculent, of light yellow hue." On account of the vomiting a pill containing sulph. cupri, gr.i., pulv. opii, gr.½, was ordered to be given every eighth hour, instead of the vegetable astringent. He was also ordered a draught occasionally, containing liq. opii sed. min.xl. The stools continued to be frequent, and the pills occasioned nausea and vomiting. They were therefore, on the 12th, only given morning and evening, and, on the 13th, they were stopped. The treatment consisted in fomentations, epithems, opiate draughts, and an occasional draught composed of tr. rhei, ʒj., tr. cinnamom. co. ʒj., tr. opii, min.x. This latter was given morning and evening.

On the 15th, the report is:—"Bowels moved thirteen times. One stool seen, feculent. Slept pretty well. Less thirst. Pulse 81 (previous to this it had ranged from 96 to 105). No return of nausea. Appetite improved. Tongue clean. He was now ordered the gallic acid with ext. of gentian, night and morning. On the 16th, he was moved twelve times. Stools seen, feculent, slate-coloured, pretty copious. He now went on improving, so that, on the 9th October, he had only one "pretty consistent" stool in the twenty-four hours. From this time, with the exception of a slight relapse, he did well, and was discharged cured on the 30th October.

This was a very sharp attack of dysentery, and during the time the spurious aguish attacks were occurring was somewhat critical. The attacks disappeared without any agent being directed against them.

The following case is an example of ague appearing in the commencement of a dysenteric attack:—

George T. Digby, æt. 23, A.B., belonging to H.M.S. Alligator, had been for some time on the station. On the 16th of August 1852, he was seized with headache, nausea, and frequent purging, with considerable griping. The draught which was administered gave only partial relief to his symptoms. In the afternoon, he had an attack of ague. The rigors were severe, and were succeeded by heat and diaphoresis. On the following morning, when he was admitted into hospital, the report made was as follows:—"Has been called to stool six or seven times this morning, and has voided on each occasion a scanty quantity of 'slimy fluid.' Considerable griping is experienced, and some tenesmus attends dejections. Pain is complained of when pressure is made in region of cœcum and ascending colon. Surface of body of moderate temperature. Pulse somewhat accelerated. Tongue slightly coated. Thirst."

In this case, leeches were applied to the seat of pain, and afterwards to the anus. Frequent fomentations, and calomel and opium, with mercurial frictions were employed. With the action of the mercury upon the system the stools diminished in frequency, and from being ten, twelve, and upwards in the twenty-four hours, and muco-sanguineous, they were reduced to five or six, and became bilio-feculent. Flatulence proved, as it frequently does, a very

distressing symptom; but he gradually improved, and was discharged to duty on the 23d September. He had only the one attack of ague.

I have now, at much greater length than I anticipated when I commenced this paper, given examples of various forms of dysentery as they occurred in my own experience in the Canton River and at Hong-Kong. With regard to the disease as it came under my notice in Australia, I think I cannot do better than transcribe what I said of it in the medical journal of the ship in which I was serving on that station. It may be well to state that the disease occurred as an epidemic at the time, and that I have already fully described the nature of the locality at which we lay, as well as all other circumstances having a bearing on the epidemic, in a former part of this contribution.

"All the cases which have been under treatment in this ship have been ushered in with the ordinary symptoms of diarrhœa, and that of not a very severe character, and the real nature of the disease has seldom been revealed until two or three days after the patient has been placed on the sick list; and even when true dysenteric symptoms have made their appearance they have not been of so urgent a nature, so far as tenesmus and griping are concerned, as is usually found in this disease. But the disease has been very formidable nevertheless, causing much anxiety, and calling for the greatest attention. The calls to stool usually averaged from ten to twelve in the twenty-four hours, the dejections for the most part being entirely muco-sanguineous. The pulse, when the disease was well marked, averaged about 100. The tongue in one instance was for several days red, glazed, and dry; in other cases it was furred in the centre, and more or less red at the tip and edges. The surface of the body gave off the unmistakable dysenteric odour, and everything gave evidence that, although some of the symptoms might not be very violent, the disease was of sufficient severity to cause great apprehensions."

Scurvy has been so entirely banished from our fleets at the present day, that it rarely occurs to the medical officer to become acquainted, either with the affection itself, or with the modifying influence which a scorbutic taint exerts upon disease. It was my fortune, however, to serve as assistant-surgeon of the flag-ship on the south-east coast of America in 1845 and 1846, at which time we were engaged in active operations in the River Plate, protecting the town of Monte Video, which was in a state of siege, and operating actively against the dictator Rosas. During the whole time we lay in the river we were at anchor off Monte Video. Both banks of the river, in their entire extent, being in the possession of the enemy, provisions were very dear, and on our first arrival it was with difficulty we could get a small supply of vegetables for our sick. Scorbutic symptoms soon made their appearance amongst our men. The majority of the ships of the squadron which were engaged in active operations, either in the rivers Uruguay or Parana, were

almost always plentifully supplied with all kinds of provisions ; but those occupied in enforcing the blockade of the cities on the banks of the Plate, more especially at Buenos Ayres, suffered considerably, so much so that it was found necessary to recall one of them, and ultimately to send her to Rio de Janeiro, for the improvement of the health of her crew. I find the following notes made by me at that time :—"That symptoms of scurvy, a disease now, fortunately, almost unknown in the British navy, should have made their appearance among our ship's company shortly after our entering the river is not so surprising, as that the cases were so trifling, and so readily amenable to the treatment employed for their cure. Those affected were generally of a naturally cachectic habit of body, and although the leading symptoms were in all very much alike, there were a few cases in which the absence of the principal characteristics of the disease rendered accurate diagnosis sufficiently difficult. Weakness, loss of appetite, and an overpowering listlessness, or disinclination for exercise of any kind, were generally the chief symptoms complained of. On examination the gums were found to be livid and spongy, and there was much fetor of the breath ; minute petechiæ surrounding the roots of the hairs, studded the whole leg ; large livid discolorations occupied a considerable extent of surface, in some instances ; and in some cases there was œdema of the ankles and dorsum of the foot. In some there was stiffness of the knee-joints, and pains in the calves of the leg, which were generally found to be very hard, and sometimes swollen. Nyctalopia was a very common symptom, and although at first I was disinclined to regard this affection as being in any great measure dependent upon a scorbutic taint, I have since had reason to alter my opinion, having seen several cases in which it was the primary and most urgent symptom. On shore scurvy prevailed to a great extent, and in the 'Hospital de Caridad,' a large public institution in Monte Video, I saw one or two very severe cases, in which large ecchymoses covered the whole body."

Under these circumstances then, and with this scorbutic taint affecting the ship's company, the hot weather, which in that country begins about the end of November, brought us many cases of diarrhœa and dysentery, both of a severe nature, but neither of them proving fatal on board our ship, although in the squadron, and amongst our troops on shore, the latter disease caused some mortality. The symptoms which ushered in the majority of the cases of diarrhœa resembled much the accession of cholera, the attacks generally taking place suddenly during the night, and being attended with great prostration of strength, cramps of the extremities, and slow and feeble pulse. There was also, occasionally, nausea and vomiting. This stage, which had in most instances been preceded for a few days previously by a slight feeling of uneasiness in the transverse arch of the colon, was generally relieved in two or three hours by the means employed in combating it, and was succeeded

by slight febrile reaction, and severe and continued purging. The stools, at first of a dark clay colour, became watery and colourless, and if the remedies failed in checking them they became mucosanguineous, and the disease assumed the true dysenteric type. These were the symptoms in our most severe cases; they were comparatively few in number, however. In many the attack was sudden, and without the slightest previous ailment: the bowels had been in a tolerably regular condition, and there had been no unusual exposure nor irregularity of diet to account for the attack, which generally roused the patient out of his sleep, and was attended with severe griping, and frequent and copious stools. None of the symptoms were so urgent as in the previous case, and the disorder was much more amenable to treatment. Other cases occurred, in which the only symptom was frequent purging, unaccompanied with griping or pain of any kind. This affection, in the worst cases, confined the patients to the sick list for a month or six weeks before they were considered fit for duty, and after their discharge the uneasiness in the course of the colon, which I have before spoken of as being in many instances premonitory of the disease, continued for some time, and any slight irregularity of diet readily induced a return of the complaint.

Amongst the diseases met with in the River Plate diarrhœa takes a very prominent position. Under ordinary circumstances it is very easily dealt with, a brisk purge, with abstinence from animal food, and rest for a couple of days, usually effecting a satisfactory cure. Under the circumstances by which we were surrounded in 1845 and 1846, this diarrhœa, acting on systems enfeebled by a scorbutic taint, was not only peculiar in the method of its approach, but, when it became obstinate, the dysentery which it ushered in was of the true epidemic type. The dysentery of the River Plate is usually sporadic dysentery. It cannot, however, be said to be a common disease there in any form; when it does occur it has its most frequent origin probably from the outpouring of acrid bile into the intestines. By many the origin of the diarrhœas and dysentery of the River Plate has been attributed to the use made of the river water for drinking purposes. This idea is, however, to a great extent refuted by the facts, that in the 45th and 73d regiments, which garrisoned Monte Video in 1845 and 1846, dysentery prevailed in its most virulent form, although they were not supplied with water from this source. Again, on board ship, where no other water was made use of, these diseases, had such been their cause, ought to have been equally prevalent at all seasons, whereas they were rarely, if ever, seen excepting during the hot months.

Good water is, unquestionably, a desideratum of the very first importance on board ship, and in no part of the world, perhaps, is care and circumspection more required than in watering ships in the River Plate. The water is usually procured from the river itself at a distance of from forty to sixty miles to the westward of Monte

Video. Occasionally, at the very roadstead off Monte Video, the water has been so fresh as to enable commanding officers to pump into the tanks what was sufficiently good for washing purposes. The water obtained in this way, however, only occurs in a stratum of not more than three or four feet in thickness on the surface of the salt water, so that any want of attention on the part of those in charge of the hose outside the ship, which would permit it, either through carelessness or the rolling of the ship, to be submerged to a greater depth, would infallibly fill the tanks with brackish water. It becomes very necessary, then, to put a strict guard over these tanks, to prevent their being used for cooking or drinking purposes. Even the water which is brought from a distance up the river, where it is reported to be perfectly fresh, should be carefully examined as it comes on board. If it is brought in casks, as it very often is, no cask should be started into the tanks until it is tasted by a medical officer, and, when it is pumped in from a lighter, it should also be tasted every five or ten minutes. The importance of these precautions cannot be over-estimated, especially in a locality where, in the hot months, diarrhoea is so common.

I did not make any careful analysis of the water of the River Plate, but the rough chemical examination to which I submitted it showed that a fair average specimen did not contain more earthy salts than the English water we had on board.

The cases of dysentery which came under my notice in the Mediterranean were both sporadic and epidemic. They occurred chiefly in the Bay of Naples, and were contemporaneous with a diarrhoea which prevailed somewhat extensively amongst the men. In almost all the cases there was a considerable amount of urgency in the symptoms. Not such urgency as is observed in many cases of acute dysentery, inasmuch, as there was comparatively little tenesmus, nor were the abdominal pains so severe; but the calls to stool were frequent, the stools were quite characteristic, there was tenesmus, anorexia, an anxious expression of countenance, and other signs indicating a considerable amount of constitutional disturbance. One of the cases occurred in the person of an officer, who, after leaving the opera, had eaten one or two ices. He was seized with very urgent and painful diarrhoea, and in two days the stools were decidedly dysenteric. He was confined strictly to the recumbent posture, not being allowed to get up even to the night chair. Leeches were applied to the pained part. Blisters over the abdomen, sinapisms, epithems, fomentations, and cotton wadding covered with gutta percha, were the external applications in his case; while a pill, composed of calomel, gr. $1\frac{1}{2}$, pulv. ipecac. gr. i, and pulv. opii, gr. $\frac{3}{4}$, was administered every three hours. This treatment was continued for some days without any progress being made in the case. The gums were not in the least affected, and the system appeared to be becoming irritable. The mercurial was accordingly stopped, and powders containing bismuth, ipecacuan,

and morphia administered every four hours, with good effect. His stools steadily diminished, and became more consistent, and ultimately it was found necessary, occasionally, to give a little castor oil, to remove scybalæ, which had begun to collect in the bowel.

Some of the other cases, however, from insidiously attacking cachectic subjects, presented the true epidemic type. This was especially the case with a marine, who presented himself with dysenteric symptoms, on the 10th October 1861. It appeared that he had been frequently purged for some days before reporting himself. He was discharged to hospital on the following day, and he died on the 18th, the progress of the disease never having been in the least degree stayed. On the post-mortem examination, of which, however, I have not the particulars, the disorganization of the bowel was found, I believe, to be very great, and the coats were very much thickened.

Prophylaxis.—In so far as dysentery itself is concerned, the measures to be adopted in guarding against its attacks will be the same, whether the disease be sporadic or epidemic. The avoidance of all those agents which are known to induce the disease will be obviously the first consideration, and in localities where there is a high rate of temperature with much moisture and a tendency to alternations of heat and cold, surveillance will require to be more constantly exercised, and sanitary rules more stringently applied, than under other circumstances.

The laws which regulate the internal economy of a man-of-war, in so far as the general service is concerned, are laid down in the Queen's Regulations and Admiralty Instructions. Supplementing these, however, are certain rules which attach to every individual ship, which are issued by the captain, and are derived, some from the traditional customs of the service, and some from the individual experience and judgment of the captain himself. The general laws of the service can only be altered by the Lords Commissioners of the Admiralty; the minor rules may be added to or taken from, modified or altered, as experience dictates, or circumstances require. In all matters affecting the health of the ship's company, the medical officer is, of course, the principal authority, and in framing any sanitary laws for the guidance of the crew, he will be consulted by the captain, and his views, if possible, carried out. A very considerable experience of ships of war, and much thought given to the subject, will, I trust, acquit me of presumption in the eyes of my younger brother officers, to whom I especially address myself, if I venture to suggest a few simple rules for their guidance in this matter. In doing so, I shall suppose that their opinion has been called for in the drawing up of such rules as may be deemed advisable on the arrival of a ship in a locality where acute and fatal diseases are endemic, or where contagious disease is epidemic, or in the contingency of an epidemic breaking out on board ship. General hygienic laws I presume to be already established in the ship:—

1st, Let the opinion given be the result of careful thought, and of as much inquiry as can be brought to bear upon the matter. A hasty, ill-judged opinion is often not only fruitless of good, but detrimental in its results, and it tends to weaken the confidence of both officers and men in the knowledge and skill of the medical officer. General laws will guide a medical officer in the foundation of his opinion, but inquiry into particular circumstances affecting locality, and the experience of those long resident in the place, will add much value and weight to the conclusions he may arrive at.

2d, Let the opinion be stated in plain and perspicuous language, and as much freed from all technicalities as possible. The "amour propre" need not be offended if the statement does not appear at once to meet with cordial acquiescence. That which is very obvious to the medical officer may not necessarily be so to any one else, and if there is any failure on the part of others in immediately apprehending the full value of his opinion, it need not be attributed either to indifference to the health of the ship's company, or to any wanton slight to the medical officer himself. It should only urge him to attempt to explain still more clearly and fully, if possible, the grounds upon which his views are founded, and the necessity there is for having them carried out. Should he be doubtful of his own powers of convincing by verbal representation, he will have fulfilled his duty when he has submitted the matter in writing.

3d, In suggesting sanitary measures, care should be taken to avoid, if possible, any unnecessary interference with the comforts of the men, or the imposition of additional duties upon any one. The medical officer, whose administrative talents enable him to suggest to the executive authorities such measures as will accomplish his end with the least demand upon the ordinary working "hands" of the ship, will find his object achieved much more readily than under other circumstances. It is no reflection upon the executive of a ship, that in carrying out a sanitary measure they should call upon the medical officer to show how it is to be done. That which is offered for their consideration abruptly may have been the result of much thought to him for a considerable time, and he should not deem it beyond his province so to view it in all its bearings that he may be ready, if required, to offer suggestions as to how it may most readily be carried out.

Having offered these preliminary observations, I would remark, with regard to dysentery, more especially in the tropics and in malarial districts, that it will be well,—

1st, *To institute a watch over men sleeping in the open air.*—In taking the necessary steps to have this measure effectually carried out, it will not be required to lay down any irksome rules, or to impose additional work upon any one. All that appears to be necessary, is that the police of the ship, and the petty officers who are moving about, should be instructed to keep an eye upon the sleeping men, to see that they are not suddenly exposed to a current

of cool or cold air, and especially to see that any exposed part of the body is immediately covered. It will be well also to make the men themselves acquainted with the risks that are incurred by carelessness on these points, and for this purpose a short, simple, intelligible "notice," hung up on the lower deck, will suffice.

2d, *To have it established as a rule that after exercise, or heavy drill in the tropics, the men should shift into dry clothing.*—I am well aware of the difficulties attendant upon the carrying out of this rule, and that with some show of justice it may be said that it would involve an increase in the amount of clothing, which would be a heavy charge upon the men, and for which there would be an impossibility to find stowage room. But I think the difficulty is more seeming than real. A couple of frocks, a couple of flannels, and two pairs of trousers, in addition to what is at present considered necessary, would meet all the requirements of the case. Natives of temperate climates residing within the tropics, soon ascertain from experience that they imperil their health if, after being overheated, they remain long without shifting their underclothing; and I am informed by a gentleman who has resided long in Malta, that the Maltese themselves look upon it as extremely dangerous to neglect shifting their underclothing when they get overheated.

3d, *To have most stringent regulations established with regard to men dressing, or at least putting on their trousers, before going into the "head" at night.*

4th, That on the Canton River station, ships should be relieved as frequently as possible from river service, and that while stationed there during the hot season a morning and evening dose of quinine should be issued to the ships' companies.

5th, That the first and middle watches in the Canton River and its vicinity, and in malarial districts generally, should have an allowance of tea or cocoa issued to them: that to the first watch about 10 P.M., and that to the middle watch shortly after their turning out. A recent regulation has authorized an extra issue of tea or cocoa under certain circumstances, and the indulgence has been hailed as a great boon, but it has, I think, been chiefly applied to cases in which the men have had to contend with cold damp weather. I believe it would prove of immense value if given in malarial districts at night, when the emanations are greatest, and when the men, from their long abstinence (usually 10 or 12 hours), are least able to resist their noxious influence.

6th, That a strict surveillance of bumboats should be established in all localities, but especially in those where dysentery is notoriously endemic.

7th, That men should be warned to report themselves on the first signs of diarrhoea appearing, and that petty officers should be instructed to report to the medical officer men who are known to be labouring under diarrhoea. The rapidity of the changes which may occur while the symptoms have assumed no greater importance than

that of diarrhoea leads me to lay much stress upon this regulation, and, as sailors will often suffer a great deal before reporting themselves, much active interference may be found necessary in carrying out this rule.

These are the chief prophylactic measures I can think of as applicable to a whole ship's company. They are calculated to prove useful in the prevention of other diseases besides dysentery; two of them, indeed, the issue of quinine, and the issue of tea or cocoa to the night watches, have especial reference to malarial fevers. I have introduced them because whatever can be found to counteract the noxious influences of the malarial poison will place the patient in a better position to contend with dysentery, should he be attacked with that disease.

There is one other point, however, to which I would refer. If possible, during the hot season, salt meat should be entirely excluded from the sailor's ration in the Canton River. Even when fresh provisions can be obtained in abundance it is often the custom to make two days in the week "salt-meat" days. This is done as a rule, I think, in deference to the wishes of the ship's company, who ask for salt provisions, not because they prefer them to fresh, but in order that, by not eating their full allowance, they may get "savings" on what they leave. What they do eat, however, is so totally unfitted for such a climate as the Canton River in the hot season, that this most objectionable custom should be entirely abolished.

Treatment.—It is not my intention to enter upon any examination of the various remedies and modes of treatment which have at different times been suggested in this disease. I think it better to state as simply as possible the treatment I have had most experience of, and that which in my own hands has proved most successful. This will be more useful to the young medical officer who, placed for the first time, perhaps, in the responsible charge of a large body of men, may happen to be sent to a station where a very serious and urgent disease, of which he can have had little or no experience, is liable to meet him at every turn. It is a trite observation that no rule of treatment can be laid down for any disease which will apply to all cases. As the medical officer becomes familiarized with dysentery, he will see reason to alter or modify his treatment of individual cases, according to a variety of circumstances as they arise; so that all that can, with propriety, be done in the way of suggestion, is to lay down the general plan upon which the disease may be attacked and combated with the greatest hope of success, until such time as that familiarity and experience have been acquired which will enable him to trust confidently to his own resources.

When a patient presents himself complaining of symptoms of dysentery, the first indication, after examining into the general state of his system, will be to make a careful examination of the abdomen,

to ascertain if there is any tenderness on pressure in any particular region. In making this examination it will be well to recollect that, in almost all diseases attended by febrile action, there will be a resistance offered to pressure over the abdomen, which is, however, more owing to superficial tenderness than to disease underneath; this will usually be overcome by a little attention to the manner in which the manipulation is conducted. A cool or cold hand should never be placed on the surface of the abdomen, nor should the points of the fingers, and far less the knuckles, as I have sometimes seen done, be employed, at first, in making the examination. The patient should be requested to lie easily, and to breathe as naturally as possible. He should be placed on his back, with his knees slightly bent to relax the abdominal walls. The hand, previously warmed, is to be laid gently, but firmly, flat on the abdomen, and as soon as it becomes a little accustomed to the weight laid on it, and every tendency on the part of the muscles to contract seems to be overcome, the points of the fingers may be steadily and firmly pressed all over the abdomen, the medical officer watching, although without the apparent intention of doing so, the patient's countenance, which will frequently give indication of pain or tenderness on pressure, although of so slight a character that it might be thought of too little moment to be complained of, or even its existence admitted, if it were asked about. The caput cœcum coli, along the transverse arch of the colon, and the sigmoid flexure of the colon, are the regions in which tenderness is usually complained of. When the rectum is much affected the pain will be referred more to the hypogastrium. As soon as any tenderness is made out, however slight it may be, no time should be lost in employing local depletion and fomentations as important elements in the treatment of the case, as well as powerful adjuvants to the constitutional treatment which it will be necessary to employ along with them. Generally speaking, and particularly when there is much tenesmus, great relief will be obtained by applying the leeches round the anus. How often the local depletion may be called for, will, of course, be dependent altogether upon circumstances, but the fomentations should be carefully employed every two or three hours, for twenty minutes at a time, unless their application should prove fatiguing. Very hot fomentations to the perinæum afford great relief in some cases; in the intervals between the fomentations large poultices may be applied with advantage over the abdomen. Better than poultices, however, which are objectionable for several reasons, and especially on account of their great weight, is covering the abdomen with a thick layer of fine cotton wadding, over which may be laid a thin sheet of gutta percha or oil-silk; this I have found to be very grateful to patients. I need hardly say that the simple process of fomenting is one that is powerful for good or evil. An ignorant or careless nurse may do an immense amount of mischief by mismanagement in this way. Every care should be taken, not only that the bed clothes and body linen should not be wetted, but

that there should be as brief an exposure of the surface of the abdomen in changing the flannels as possible. The patient should be moved as little as possible; indeed, it may be laid down as an absolute rule, to which there are no exceptions, that the most perfect rest should be maintained during the treatment of the disease, especially in its more acute stages. The horizontal posture should never be deviated from if possible; unfortunately, the use of the bed-pan is found in most cases to be exceedingly irksome, but where it can be employed the patient should never be allowed to get up to the night chair.

Some difference of opinion exists as to the propriety or not of giving mercury in this disease. My own experience is decidedly in its favour, for I have found that, as a rule, the more speedily the system has been brought under its influence the more rapid and satisfactory has been the cure. In every instance, excepting in particular idiosyncrasies, the mercury must be combined with opium, and that in tolerably large doses. It will also commonly be found advantageous to combine ipecacuan with the calomel and opium. The pill I have been in the habit of prescribing is composed of calomel, gr. $1\frac{1}{2}$, pulv. ipecac. gr. i, pulv. opii, gr. $\frac{2}{3}$, one to be taken every three or four hours. This small amount of the metal, while it acts equally rapidly, has less tendency to irritate the bowel than larger doses. When the nervous system is much implicated, it will always be found that there is great difficulty in inducing the specific action of the mercury, and care must be taken not to push its use too far, as its tendencies, after a certain time, are decidedly hurtful. When the disease has lasted so long without amendment (that is to say without a stop being put to the muco-sanguineous dejections) as to induce the belief that considerable disorganization of the intestinal mucous membrane has taken place, it will be necessary to stop its exhibition, for its tendency is to cause softening, and ultimately to lead on to gangrene. It will generally be found that if mercury has been employed regularly for four or five days, without showing any sign of action upon the system, a considerable amount of irritability is begotten, the pulse becomes hard and sharp, and the dysenteric symptoms become aggravated. I have, on several occasions, seen this difficulty experienced in procuring mercurialism in cases of dysentery in China, and in every such case the disease either proved extremely urgent or had a fatal termination. While, on the other hand, both in China and elsewhere, when the mercury has speedily acted, all the symptoms have rapidly improved, and the case has proceeded to a favourable termination without further difficulty. I have also seen cases where mercurial frictions having been continued, after it has been deemed advisable to stop the internal administration of mercury and have recourse to other remedies, pytalism has set in, and with its accession all the dysenteric symptoms have begun at once to improve. Should it not be deemed advisable to proceed with the mercury, much relief may be obtained

from powders composed of bismuthi alb. gr.vj., pulv. ipecac. gr.i, morph. hydrochlor. gr. $\frac{1}{6}$, given two or three times a-day; these powders seemed to act admirably in allaying the irritability of the intestinal canal. In fact, I know no combination which gives so much relief as this does in some cases. It causes very urgent thirst, however, and great and most irritating parching of the mucous membrane of the nose. Like every other remedy, in some cases it acts less beneficially than in others. In one case of chronic dysentery which came under my care at Naples, it did not diminish the number of stools at all, although the patient felt much easier after taking the powders. In the majority of cases, however, as I have said, it acts most admirably.

As one of the most decided indications in dysentery is to diminish the peristaltic action of the bowels as much as possible, opiate suppositories, opiate enemata, and draughts containing sol. morph. hydrochlor., or liq. opii sedativ. will require to be occasionally administered. Thirty or forty minims of either of the latter should be given as a draught at bed time; and in exhibiting the opiate enema it will be advisable to make it as little bulky as possible. Starch is the usual vehicle in which the opium is conveyed into the bowel, and an ounce or an ounce and a-half will be quite sufficient for the body of the enema, to which may be added a drachm of the liq. opii. sedativus.

While these measures are being adopted, benefit will sometimes be derived from the occasional administration of a draught composed of the tincture of rhubarb, cinnamon, and opium, in the proportion of a drachm of each of the former to ten minims of the latter in an ounce of peppermint water. These draughts we were very much in the habit of giving, night and morning, in China. In the latter stages of the disease it may be found necessary to use astringents, and with this view the acetate of lead with opium, sulphate of copper, gallic or tannic acids, or the tinctures of catechu and kino may be used at the discretion of the medical officer. The acetate of lead is perhaps as valuable and efficacious an astringent as can be employed. The catechu and kino, I think, are rather objectionable astringents. They are apt to disagree with the patient, and frequently induce nausea and vomiting. The same objection is sometimes applicable to sulphate of copper. With regard to the use of astringents generally in dysentery, I would briefly remark, that, while in the early and active stage of the disease they are decidedly contra-indicated, there is a period when they are of great value. Such is the case where the character of the discharges and the nature of the symptoms generally give evidence of a want of tone in the intestinal mucous membrane, when they are urgently called for to arrest that redundant secretion from the membrane, which, by its accumulation, irritates and calls into play the peristaltic action of the gut, and so interferes with that entire repose which is so essential to a speedy or satisfactory cure.

A very troublesome symptom, which is liable to complicate the latter stages of dysentery, is flatulent distention of the abdomen. For this, small doses of turpentine will be found most efficacious. The formula we were in the habit of employing was spt. terebinth. min. xv. to xx., ol. ricini, ʒj., aq. menth. pip. ʒj. Blisters and epithems to the abdomen are also sometimes useful, in the chronic form of the disease. The drink should be barley or congee water. The less fluid that is taken in all stages of the disease the better, and in the earlier periods what little is given should not be too cold; patients, themselves, soon become conscious of the speedy effect a draught of water has in sending them to stool.

The diet of the dysenteric patient should be strictly *low*, as long as there are the slightest indications of inflammatory action; and throughout the whole treatment of the case the greatest restraint must be placed upon the appetite, which is apt to become very ravenous during convalescence. The patient should work his way through sago, arrowroot, and rice, to beef-tea, and chicken and mutton broth, and his introduction to solid animal food should be made with the greatest possible caution.

In conclusion, and with reference to treating dysenteric patients in an hospital, or even on board ship, I would strongly urge the propriety of never placing a man recently attacked with the disease next to a patient who is recovering. I am satisfied that many a man lost his life while the Alligator was employed as the Royal Naval Hospital in China, from the impossibility, on account of the smallness of that vessel, of keeping patients separated from each other, and I have frequently seen men who were fairly convalescent thrown completely back by this circumstance. The force of sympathy has been so great, that, as the men stated themselves, every time the one man was called to stool, the other felt a strong and imperative desire to follow.

ARTICLE III.—*Observations on Some New Remedies (made in Edinburgh Royal Infirmary).* By JAMES WATSON, M.D.

(*The substance of an Inaugural Dissertation presented at the Medical Graduation in August 1863.*)

THE constant introduction of new remedies is one of the peculiar features of the present day. Ever and anon a new drug is announced, which is to act in such a wonderful manner that what was formerly considered a most fatal disease shall turn out to be a mild and altogether insignificant complaint, under the benign influence of this new agent. Such assertions of course attract notice, are put to the test, and usually, I am sorry to say, are found by competent judges altogether untrue. But, nevertheless, such is the careless and slovenly way in which many practitioners test

new remedies, that in a few weeks after the first announcement of the great curative discovery, there will be found testimonials advertised in the medical and surgical journals, from duly qualified and respectable medical men, speaking in the highest terms of the results achieved by the new agent. That such is the case, any one can convince himself by looking at the advertising columns of the pharmaceutical and medical journals. How is this? it may be asked. The explanation is simple, and far from creditable to our profession. Those who are so ready to attest the remedial qualities of new drugs proceed after this fashion:—They get the drug, ascertain the dose, and, in the first case said to be suitable for the exhibition of the medicine, administer it. Very generally, without taking into account the natural course of the disease, they begin to make observations. Day after day they watch the case, and at last the patient is pronounced quite well. If the cases are reported at all accurately, the critical reader will almost without exception find that the fever or other disease has followed its natural course, that the critical day corresponded with what has been universally observed; and, in truth, all that the remedy is entitled to claim is, that its action has been so fortunate as not to interfere with the natural progress of the case. Such observations are worse than useless and serve only to retard the progress of medicine; while the loose and unscientific manner in which they are conducted, is calculated to bring discredit upon the whole medical profession.

How then are remedies to be tested? At what tribunal are they to be declared accessions or encumbrances in the practice of our profession? That many medicines have a reputation in private practice which at once falls to the ground when put to the test of hospital criticism, every one must know who has paid even slight attention to the experiments made in such institutions. I would therefore insist that every new drug should be fairly tested in a well-ordered hospital, where every fact is carefully noted and recorded; where the cause, origin, course and termination of disease is closely and accurately followed; and where the action of a drug, if it has any virtue, is likely to be discovered. Till it has been so tested it behoves medical men to be cautious how they employ or recommend the employment of a new medicine.

While new remedies are continually coming to us from all parts of the world, to no country do we owe so many as to America. This is what one would expect; for it holds true of nations as of individuals, that in proportion to their youth is their desire to innovate, rather than to consolidate or exhaust existing knowledge. We therefore find ever and again a new remedy announced from America, which, under certain circumstances, is to act as a charm. Last year, Dr Cutter, of the United States, published a pamphlet on the therapeutical action of a new drug, or at least of a drug that for many years had fallen entirely out of use. He also visited this country and tried to interest the profes-

sion in it. I shall, in the first instance, draw attention to the substance in question, namely :—

Veratrum Viride.

This plant belongs to the natural order Melanthaceæ. It is the American or green hellebore, and is found from Canada to Georgia. The root, the only efficient part, is perennial, bulbous, stout, premorse, and dark-coloured at the base. It may be gathered in the spring, or autumn, indifferently. The pharmaceutical preparations are the infusion, decoction, powder, fluid and solid extracts, wine, tincture, and ointment. Of these, the tincture is said to be the best. The formula recommended by Dr Cutter is four ounces of the dried root to the pint of diluted alcohol, Sp. gr. 0.835.

The chemical composition of the *Veratrum viride* has not yet been settled, but it is believed to be very similar to that of *V. album*. The dose of the tincture is from five to eight drops. When taken in maximum doses of eight drops and pushed to its full effects, the following phenomena are said to be witnessed in health : 1st, Reduction of pulse, sometimes to thirty beats per minute ; 2d, Nausea and vomiting ; 3d, Profuse sweats ; 4th, Coldness of surface ; 5th, Reduction in frequency of respiration ; 6th, Dilatation of the pupils ; 7th, Nervous sensations such as numbness all over the body, tingling of extremities, muscular weakness, inability to move, and a feeling of immediate dissolution ; 8th, Pallor of countenance.

Dr Cutter tells us all these results are witnessed in disease, only in a greater degree ; and from its action in health he expects it should prove a valuable therapeutical agent. He proceeds to tell us it has proved so, and to such an extent has it met with approval in America that “there is hardly a complaint, from measles to hydrophobia, for which it has not been employed and recommended.” We should expect a medicine with such universal qualities to meet with a somewhat suspicious reception in this country, however highly praised and welcomed by our brethren on the other side of the Atlantic. But though so generally useful, it is as an arterial sedative that its peculiar virtues become manifest, and it is as such that Dr Cutter presses it on the attention of the medical world. He says that the *V. viride*, in some of the forms of functional and organic diseases of the heart, will prove invaluable, and that in aneurism it is looked upon as a sheet-anchor.

Although many of the cases recorded by Dr Cutter are of a very unsatisfactory character, I was induced to enter upon an investigation regarding the properties of the *Veratrum viride*, and shall state a few of the results obtained from experiments made in the Royal Infirmary of Edinburgh, as to its action as a vascular sedative.

Early in the month of January I ordered a quantity of the tincture from Messrs Duncan and Flockhart of this city. As they had none made when I

called, I asked them to make it according to Dr Cutter's directions, which was done. Mr Simpson (of Duncan and Flockhart's) very kindly gave me an ounce-phial of the tincture, made by Dr Cutter himself from roots gathered and prepared by his own hands. I naturally enough fancied that this specimen would possess the virtues attributed to it by the maker, and one evening in January made a series of observations as to its physiological effect on a fellow-student and myself. We began our observations at a quarter past six o'clock in the evening, when we each took, what, according to Dr Cutter, is a full dose, namely eight drops. Both my friend's pulse and my own stood at 64 beats per minute. We counted each other's pulse and marked down the number of beats every fifteen minutes till a quarter past eight o'clock. From a quarter past six we took every half-hour another full dose, till we had each consumed thirty-two minims of the tincture, but at the end of that time I was surprised to find that there was not in either of us the slightest difference in the strength or rapidity of the circulation.

Considering it barely possible that, from some constitutional peculiarity on the part of my friend and myself, the drug had not produced the usual results, I thought it only fair to test it on some one else. I obtained permission to make a series of observations on a patient in Ward 15, Medical House, who was labouring under phthisis, and whose pulse had persistently stood for many days at 120. The tincture was given on four separate occasions; on the first, sixteen drops were given in two doses; on the second, thirty-two drops in four doses; while on the third and fourth, forty-eight drops were administered in four doses; on all of these occasions the results were absolutely negative.

The quantity of the tincture prepared by Dr Cutter being now exhausted, I proceeded to experiment with that made by Messrs Duncan and Flockhart. One day at 3 o'clock P.M., after dinner, I took a full dose of eight drops, and immediately went to the Practice of Physic Class, and thence to the lecture on Pathology. I was quite unaffected by the dose, my pulse remaining throughout those two hours exactly as it was when I took the dose. Immediately on getting to my own room in the Royal Infirmary, at 5 o'clock, I took another full dose, and then partook of tea, drinking two ordinary-sized cupfuls and eating a quarter of a slice of bread. After this I had occasion to walk through the Medical Wards, and when I reached my room it was striking 6 o'clock. Still the drug had produced no effect. My pulse, after resting a quarter of an hour, was exactly as I counted it before taking the first dose at 3 o'clock in the afternoon. Towards 7 o'clock, I was troubled a good deal with flatulence, which I attributed to the *veratrum*. Some minutes before 7, I began to feel nauseated, and should have vomited had I not made an effort to restrain myself. With the nausea, which now became very marked, I noticed that both the force and the frequency of the pulse became diminished. There was now griping of the bowels, and I experienced sickness and weakness, with considerable pain over the epigastrium. My head also became affected,—heavy dull headache with occasional painful throbbing in the temples being experienced. My pulse was now 64; it was 70 at 3 o'clock. The pain in the bowels continued and I felt getting weaker, but as I wished to have the full effects induced, at 7 o'clock I took another dose of eight drops.

From 7 o'clock till a quarter past, my sensations remained pretty much the same, the general depression continuing, with the griping perhaps a little more frequent and severe. At a quarter past 7, I became weaker, and felt that I must soon vomit. The pain in stomach and bowels became much more severe, a clammy cold sweat broke out on my brow, and at half past 7, I vomited with great pain. By this time my back had become very weak, and the retching was attended with intense pain, at times almost amounting to agony. While vomiting, which I continued to do till about 8 o'clock, it required all my remaining strength to support myself. My back became weak in the extreme, and when a fit of retching came on I felt as if going to be asphyxiated. The pain at this time was most severe over the front of the chest, with occasional

twitchings of the small intestines. I was now attacked by one or two cold shivers. My feet and hands became cold and benumbed, though there was a large fire blazing in the grate. The cold numb feeling crept up my legs and arms, and at last my whole body felt as if enveloped in cold damp clothes, and I became quite prostrate. The vomiting having ceased, I sat down by the fire, but still my feet and hands were quite cold. It was now a little after 8 o'clock, and I counted my pulse, which was reduced to 40 beats per minute, and very weak.

The flatulence continued pretty constant till a quarter past 8, when I again vomited slightly; the process though painful being not nearly so much so as at first. The clammy cold sweat continued, and the whole surface of my body felt benumbed.

At half-past 8, my bowels were slightly moved, and after this the griping pain nearly disappeared. At 8 $\frac{3}{4}$, my pulse was at 56.

Though the pain was now gone, the depression and prostration were still affecting me, and as I did not wish to be longer under the disagreeable influence of the drug than was necessary, I drank, at 9 o'clock, a couple of ounces of sherry. I walked up and down my room, but felt quite weak, and, about 10 o'clock, took other two ounces of wine, which made me feel somewhat better. After this I went out and walked in the open air, but in spite of wine, walking, etc., I felt quite exhausted, and for the rest of the evening unwell. I may here state that my face became very pale after vomiting, but that there was no dilatation of the pupils.

At 12 o'clock, my pulse had almost recovered its usual number of beats for that time of night, but, still feeling the bad effects of the veratrum, I went to bed. Next morning, I felt no inconvenience from the experiment of the former evening.

The above, I think, is quite sufficient to indicate the effects of this drug when taken in health. I shall therefore proceed to record the results obtained from an observation made on the patient on whom I had already experimented with Dr Cutter's preparation. As has been already stated, she was labouring under phthisis and had a persistent pulse at 120 :—

At a quarter to 9 o'clock P.M., the patient's pulse, was 120. I then gave her eight drops of Duncan and Flockhart's tincture. At 9 o'clock and a quarter past 9 o'clock, I again counted the pulse, and found it exactly as it was before she had the drops. As I had not made the experiment just recorded on myself by this time, and as she had taken without any effect whatever the tincture made by Dr Cutter, I thought I might without danger administer another dose of eight drops. This I accordingly did at a quarter past 9 o'clock. I sat with her to watch the effects. At half-past 9, the pulse was unaffected, and again, when I felt it at a quarter to 10, it remained unaffected both as regards number and character. It still continued 120 per minute. I now left her for a few minutes and went down stairs to the laboratory. I had not been away more than seven or ten minutes at the most, but when I returned I found the poor woman sitting up in bed vomiting and retching in a most violent manner, with the nurse of the ward and a patient supporting her. So severe and painful was the vomiting that the nurse got alarmed, fancied the patient was poisoned, and had sent, before I got back to the ward, for Dr Gamgee, the house-physician, who had charge of the ward; but as I got to the ward before Dr Gamgee, and had already administered brandy, when he made his appearance he very justly concluded that if he and two or three students remained it would only alarm the patient; he accordingly left her entirely to my charge. She continued vomiting with short intervals till within a few minutes of 11 o'clock. Her cries were most pitiable, her pain intense, and her prostration excessive. Every minute or so a severe retching fit attacked her,

which she described as "tearing her inside out." During this time a cold clammy sweat broke out over her whole body, but especially on the face. About half-past 10, the vomiting became less frequent and also less severe, and now the prostration became more marked. She could not raise her head when she wanted to vomit, and when a fit of vomiting came on she had to be supported in bed. When she lay down again quite exhausted, and looking as death-like as possible, she tried to raise her hand and pointed it at me (it always fell down on the bed so utterly weak was she), and said, in a weak and whining voice, "You've killed me, doctor! you've killed me!" She actually thought she was being killed, and insisted that I should send for her husband, as she wanted to see him before she died. I tried to persuade her that she would get over her sickness when she had taken some more brandy, which, along with wine, I continued to give at short intervals; but she maintained that she would not get better, and continued to ask that her husband should be sent for.

At a quarter to 11, the vomiting had nearly ceased, but she complained of great pain in the stomach and the lower part of the abdomen. I gave her in consequence 30 minims of solution of muriate of morphia in a little sherry, which after a short time relieved her suffering.

Just before the vomiting began, her pulse still continued at 120, but at half-past 10 it had sunk below 60, and was very weak. At a quarter to 11, it was at 60, and at 11, after the wine and morphia, it recovered so far as to beat 80 per minute.

After the violent vomiting had ceased she complained of cramp in her legs and arms. She said they felt quite dead. She complained, besides, of great depression over the region of the heart; but what frightened her most was the *dead* feeling she experienced, in her limbs especially, and to a certain extent also over the whole trunk.

These disagreeable feelings continued much the same till 12 o'clock, when I induced her to take some beef-tea, which seemed to revive her a little. From this time she gradually recovered from the effects of the veratrum; so that at 1 o'clock I left her. Her pulse varied somewhat between 11 and 12 o'clock. The following table accurately states the number of beats per minute from 11 o'clock P.M. till 1 A.M. :—

Time.	Pulse.	Time.	Pulse.	Time.	Pulse.
11 P.M.	80	11½ P.M.	80	12½ A.M.	72
11¼ "	72	12 "	76	12¾ "	80
11½ "	72	12¼ "	72	1 "	80

Next morning, at 9 o'clock, I went to the ward to see the patient, and found the pulse back to the old number of 120 beats per minute. She assured me most distinctly that she would have no more of the medicine I had given her the night before. She reiterated what she had before said, that last night she felt sure she was dying from the effect of the medicine. At this time, however, she experienced no bad effects from it, unless, indeed, that she felt somewhat weaker than usual.

In two other cases I also tried the veratrum, and in the following circumstances. The patients were under the care of Mr Spence in the Surgical department of the Royal Infirmary, and by him I was kindly permitted to administer the drug and make observations as to its action. The first case was that of James Aitken, æt. 16, a mill-worker from Penicuik, who, having a tumour on his right thigh, came to the Hospital for advice. Mr Spence considered amputation necessary, which was accordingly performed two days before I first administered the tincture of veratrum to him. This case I will state as shortly as possible.

At 7 o'clock P.M., I gave James Aitken 4 minims of the tincture. At this time his pulse stood at 152. At a quarter past 7, it continued at 152. He now became nauseated, and at half-past 7 vomited, and his pulse had fallen to 136.

At 7 $\frac{3}{4}$ P.M.	pulse 136.	
8 "	" "	132.
8 $\frac{1}{2}$ "	" "	132.
8 $\frac{3}{4}$ "	" "	132.
9 "	" "	132. Gave other 4 minims of tincture.
9 $\frac{1}{4}$ "	" "	132. Nausea increased.
9 $\frac{1}{2}$ "	" "	124.
9 $\frac{3}{4}$ "	" "	124. Vomiting and great weakness.
10 "	" "	124. Vomiting continued.

On the following morning, at 11 o'clock, his pulse stood at 150.

The next evening I did not administer the veratrum, but on the following morning, at 10 o'clock, again gave Aitken the medicine, with the following results:—

At 10 A.M.	pulse 132.	Gave 4 min.	
10 $\frac{1}{4}$ "	" "	132.	Feels sick.
10 $\frac{1}{2}$ "	" "	124.	Vomits.
11 $\frac{1}{4}$ "	" "	124.	
11 $\frac{1}{2}$ "	" "	120.	
11 $\frac{3}{4}$ "	" "	126. Gave other 4 min.	
12 "	" "	124.	Great nausea & occasional vomiting.
12 $\frac{1}{2}$ "	" "	124.	
1 P.M.	" "	128.	
3 "	" "	132.	

Next morning, the pulse stood at 160, and as the disagreeable symptoms induced by the drug seemed to have a bad effect on the patient, Mr Spence advised that it should be discontinued, which was accordingly done.

The other case which I have to record is that of a man named Moffat, æt. 52, who, while working in a mine, sustained a fracture of the lower part of the thigh from a heavy block of coal falling on it. The fracture was compound, but the wound communicating with the fractured bone very small. He was brought to the Hospital on the day of the accident, and at once subjected to the proper surgical treatment. Six weeks after admission, his pulse continuing rather high, I thought this a good case to try the veratrum, especially as the patient's general health was good. Mr Spence, as already intimated, gave me permission to do so.

On the 16th January, at a quarter past 7 P.M., I administered 4 minims of the tincture. Before doing so Moffat's pulse stood at 100 beats per minute.

At 7 $\frac{1}{2}$ P.M.	pulse 100.	
7 $\frac{3}{4}$ "	" "	100.
8 "	" "	100. Gave other 4 min.
8 $\frac{1}{4}$ "	" "	96. Troubled with flatulence and nausea.
8 $\frac{1}{2}$ "	" "	92. Do. do.
8 $\frac{3}{4}$ "	" "	88. Painful retching.
9 "	" "	100. Vomiting over, but great nausea.
9 $\frac{1}{4}$ "	" "	94. Great nausea continued.
9 $\frac{1}{2}$ "	" "	88.
9 $\frac{3}{4}$ "	" "	86.
10 "	" "	86.

Next morn. at 11 A.M. " 92.

On the following day I omitted the veratrum, but on the 18th I again tried its effects on Moffat, and with the following results:—

At 10	A.M.	pulse 100.	Gave 4 minims.	
10 $\frac{1}{2}$	"	" 100.		
11	"	" 96.		Complains of flatulence.
11 $\frac{1}{4}$	"	" 96.		Sickness and great flatulence.
11 $\frac{1}{2}$	"	" 92.		Do. do.
11 $\frac{3}{4}$	"	" 94.	Gave other 4 minims.	
12	"	" 94.		Flatulence continued.
12 $\frac{1}{2}$	"	" 94.		Great nausea.
1	P.M.	" 90.	Gave other 4 minims.	Continued nausea.
1 $\frac{1}{2}$	"	" 86.		Very great nausea.

At a quarter past 2 o'clock, he was attacked with a fit of vomiting of a most severe character, which lasted between twenty and thirty minutes; and indeed he experienced all the symptoms I have described in the case of Henry. He complained of the same sinking at the heart, of pain in the stomach and bowels, and, after the vomiting, of great depression and the *dead* feeling in the limbs. He also got quite alarmed, insisted I was giving him poison, and gave me most distinctly to know that he would have no more of this arterial sedative. I administered to him also, as soon as I saw the very violent effects the drug had produced, wine and brandy, which relieved him much sooner than did the same treatment the patient Henry. After the vomiting his pulse fell to 80, but at 3 o'clock, when he had taken a considerable quantity of stimulant, his pulse stood at 92. The only difference between the effects induced in the cases of Henry and Moffat was one of degree. Henry was a weaker patient, and suffered more; Moffat, being stronger, sooner recovered from the effects, though he was quite as much agitated as the other by the sensations induced. On the following morning, at 11 o'clock, Moffat's pulse stood at 96.

In the "Medical Times and Gazette" for January 3, 1863, a case of poisoning, from an over-dose of the tincture of *Veratrum viride*, is recorded, which, however, did not prove fatal. The painful symptoms experienced by the gentleman who took the over-dose agree very closely with those I have stated in the foregoing cases.

I might have given other cases to illustrate the action of this drug, but as each successive case resembles so closely the one that precedes it, such extension of cases would only tire and lead to no good. Suffice it to state, that my experience distinctly denies *Veratrum viride* to have sedative properties. It can depress, as I have shown, most thoroughly; but that it can, under ordinary circumstances, be of use as an arterial sedative, I unhesitatingly deny. Dr Fordyce Baker of New York maintains that it acts specifically as an arterial sedative, without depressing the vital powers. This statement I must distinctly contradict; and on the other hand maintain, that it is by depressing the vital powers, and that in the most marked and painful manner, that influence on the circulation is obtained. That a drug so potent in inflicting pain, and so inert till extreme nausea is induced, should ever find a place in British medicine as an arterial sedative, is exceedingly improbable. The drug may have virtues we know not of; but this, after many careful experiments, we do know,—it has no arterial sedative quality. And while we have such a sedative as aconite to rely on, it will be most strange if, even for a time,

practitioners should be so unwise as to neglect it on the bare assertion that there is a better.

Tinctura Boleti Laracis Canadiensis.

This also is a new remedy. It comes highly recommended from Canada, where it is said to be most beneficial in the treatment of rheumatism. It is prepared from a fungus found plentifully in the forests of Canada. Dr Grant, who has written a pamphlet on its effects as observed by himself, sent a bottle to Edinburgh along with a copy of his pamphlet, in which he records several cases in which the treatment by this new medicine was found highly satisfactory. Dr Grant's cases are carelessly given; but it is stated and re-stated that the tincture is of service in cutting short rheumatic fever.

This tincture was tried in a case of rheumatic fever in Medical Ward No. 11. I watched the case carefully to see if the medicine produced any marked effect on the patient. As the quantity of the tincture sent was not large, and there was no more to be had in England, it was administered to only one patient.

Margaret Edwards, æt. 17, a domestic servant, in consequence, as she thinks, of the dampness of the kitchen where she slept, caught cold; and in the evening, shortly before going to bed, she experienced some pain in left foot. Next day she was unable to rise in consequence of the pain becoming general over the body. On the third day she took two powders, which had a purgative and diaphoretic effect.

On the fourth day of the attack she was admitted into the Royal Infirmary, when she was found to have a slight blowing murmur with the first sound, heard loudest at the base. She had never been troubled with palpitation. Pulse 104, of good strength. She had slight cough, accompanied with frothy mucous expectoration. Pain in left wrist and as far up as shoulder. Right hand slightly painful. Severe pain in left ankle, leg, and thigh, and slight in the right. The lower part of the back was also painful. Appetite bad, thirst great. Bowels have not been opened for two days. Urine loaded with urates. Skin not very hot, but dry. The left wrist and ankle swollen. At night she got of Pulv. Dov. gr.x, and the following mixture:—R Potass. nitrat. ʒiss; Aquae, ad ʒxii.—M. Sig. One-third to be taken thrice daily.

Next day, the fifth day of the fever, the above mixture was discontinued, and the Canadian remedy administered in the way recommended by Dr Grant. R Tinct. Boleti Laracis Canadiensis, ʒiss; Aqua, ʒviiss.—M. Sig. A tablespoonful every three hours.

Sixth day.—Bowels relieved; urine same as yesterday. Slept badly last night. Pain the same. Pulse 96.

Seventh day.—Pulse 120. Appetite bad, thirst great. Urine without sediment. Pain much worse both in legs and arms. Hot fomentations are being applied to them.

Eighth day.—Pulse 120. Pain much the same. She has finished her medicine, which has accordingly been repeated. Skin hot and dry.

Ninth day.—Pain a little less in the wrist, but quite as severe as formerly in back and rest of body. The Canadian mixture continued.

Tenth day.—Patient slept pretty well last night. Pain in right hand a little less severe. Elsewhere it is no better. Ordered R Soda carb. ʒii; Mist. camph. ʒxii.—M. Sig. Two tablespoonfuls every three hours.

Eleventh day.—Pulse 96. Pain a little less severe in the parts affected.

Twelfth day.—Pulse 96. Urine alkaline, containing a cloud of phosphates. Pain less in right wrist, worse in shoulder, elsewhere the same as before.

Thirteenth day.—Pulse 102. Tongue, edges red, covered with a white fur. Urine of amber colour, without sediment. Pain less, especially in right arm. Medicine has been administered as ordered.

Fourteenth day.—Pulse 98. Pain much less,—has almost left the arms. Urine alkaline, without sediment.

Fifteenth day.—Pulse 98. Pain much less than formerly.

Sixteenth day.—Pulse 110. Patient much better. Urine alkaline and of an amber colour; sp. gr. 1013, with a flocculent cloud and white deposit.

Seventeenth day.—Pulse 90. The patient is much improved, has a cheerful expression of countenance, and is now convalescent. Pain is much less, but still present to as light extent in left wrist and shoulders, as well as in both arms.

Eighteenth day.—Pulse 90. Patient rapidly improving. Pain nearly gone, except when patient attempts to stand, when the knees become very painful.

Nineteenth day.—Pulse 90, and of good strength. Urine alkaline, with a sediment of phosphates. Patient improving.

Twentieth day.—Pulse 90, and of good strength. Pain almost entirely gone.

On the twenty-first day the patient continued to improve, and on the twenty-second was so free from pain that she might be considered well. All she now required was good nourishment and a little time to recover her strength.

Such is the history of a case of rheumatic fever treated with the new Canadian panacea, and it needs no remark from me to show that its administration had nothing to do with the favourable termination of the case.

Sarracenia Purpurea.

This is also a new drug, which has had most wonderful properties attributed to it,—so wonderful, indeed, that it is strange that any medical man should have been found to believe in them. That many must have credited the statements made as to its power in shrivelling up the smallpox eruption, is rendered pretty evident from the fact, that within a few weeks after its first announcement, the *Sarracenia purpurea* rose in price from three to twenty-eight shillings per pound. Let us then inquire whether the experience acquired in the Royal Infirmary of Edinburgh confirms or negatives these statements.

In one of the Smallpox Wards under Dr Haldane's charge, the *Sarracenia purpurea* in infusion was administered to eight patients, the effect carefully watched in each, and the result in all was that the disease ran its natural course. The *Sarracenia purpurea* was found absolutely inert; it produced no effect whatever.¹

In the Clinical Wards there were several cases of smallpox. The new drug was given to two patients with the same negative result. I shall report one which I specially watched.

John Drysdale, æt. 19, a shop-porter, was admitted to the Royal Infirmary to be treated for a skin disease. On admission all the systems, with the exception of the integumentary, were found quite normal. He had never been vaccinated.

¹ See a statement by Dr Haldane made before the Medico-Chirurgical Society at page 671 of the last volume of this Journal.

On the morning of January 6, he had a sudden and sharp rigor, succeeded by feverishness, nausea, and vomiting. In the evening the pulse was 115, small but compressible; tongue furred; skin hot and dry; urine passed freely (first day of fever).

7th Jan. (second day).—Febrile symptoms less severe; pulse keeps at 115; bowels constipated. Ordered—℞ Aq. ammon. acct. ℥iiss; Spt. æth. nit. ℥ij; Aquae ad ℥viii.—M. Sig. Tablespoonful four times daily. ℞ Pil. colocy. c. hyoscy. ii. Take at bedtime.

8th Jan. (third day).—Bowels freely relieved; pulse 95, fuller, compressible; the face and chest sprinkled by an eruption.

9th Jan. (fourth day).—Eruption varioloid type; patient easier, free from headache and sickness.

10th Jan. (fifth day).—Eruption fuller on the face and more plentiful on the chest, being especially abundant in front of right axilla and over mammary region.

11th Jan. (sixth day).—The patient to-day much the same as yesterday.

12th Jan. (seventh day).—Patient takes his food and sleeps pretty well; eruption continues to appear over the body; on right mammary region the eruption is become confluent; on thighs and legs it is very discreet. To-day the patient has begun taking decoct. sarraceniz purpureæ, a wineglassful thrice daily.

13th Jan. (eighth day).—Patient much the same as yesterday; pulse 85; olive-oil has been applied to the patches on the back and sides; a mask of india-rubber dissolved in chloroform has been applied to the face. Evening.—Feels the mask comfortable, but complains of pain in head; eyes painful, and has a considerable discharge from the nose; urine is high coloured.

14th Jan. (ninth day).—Patient has slept well during night, and feels more comfortable this morning; urine high coloured; pustules on face approaching maturation, those on other parts of body progressing steadily; pulse 96 and of fair strength; tongue dry, but not furred.

15th Jan. (tenth day).—Patient has passed a good night; eruption continuing to develop on face and other parts of body; bowels freely moved; a few fresh vesicles have appeared on the left side of the nose.

16th Jan. (eleventh day).—Patient has slept well, and feels better this morning; pustules progressing on legs and body; urine cloudy, with a dense deposit of lithates; patient somewhat purged.

17th Jan. (twelfth day).—Patient has had a good night, and feels much better to-day; again somewhat purged.

18th Jan. (thirteenth day).—Patient has passed a good night, and feels comfortable; stools much relaxed, but no dysentery. Ordered a tablespoonful of chalk mixture after every loose stool. Pulse 60, of fair strength, compressible.

19th Jan. (fourteenth day).—Patient has had a good night; pulse 62, of good strength; tongue cleaning; urine loaded with lithates. The sarracenia to be discontinued.

20th Jan. (fifteenth day).—Urine densely loaded with lithates, and of a deep red tint.

22d Jan. (seventeenth day).—Patient's skin has got hot and dry; pulse somewhat quickened; the urine is not so much loaded, but continues of a deep red tint.

23d Jan. (eighteenth day).—Patient much better, and continuing to improve.

In this case, it is most certain that the *Sarracenia purpurea* did not in the slightest shrivel or wither up the eruption, nor did it seem to affect the patient in any way. It has the virtue, which happily many—unfortunately not all—new drugs possess, of being perfectly innocuous. So much and no more can we say in its favour.

Carbolic Acid.

Although carbolic acid has been long known it has only of late been used in medicine. Dr Grace Calvert, chemist, of Manchester, has devoted considerable attention to it. He has succeeded in showing how it can be obtained in large quantities and in a state of purity. In the Manchester Royal Infirmary several of the medical men speak favourably of it. Thus, Dr Henry Brown has given it dissolved in water for chronic diarrhoea with satisfactory results. Dr Roberts, of the same hospital, with one-grain doses of the strong acid made into pills, has had great success in treating vomiting, even after creosote had failed; and Dr Calvert thinks that if the vapour were inhaled in the early stages of consumption, it would prove of advantage. But it is as an external agent—as a disinfectant, antiseptic and otherwise, that it is most highly spoken of. Mr Oscar Clayton of London, and Mr Turner, honorary surgeon to the Manchester Infirmary, have successfully used it as a caustic in the treatment of carbuncle and of foul sloughing sores. Mr Turner prefers it in the treatment of severe cases of diphtheria to other caustics, as its action does not generally extend below the surface of the parts affected. Mr Campbell De Morgan, Middlesex Hospital, states that carbolic acid dissolved in glycerine or glacial acetic acid has been found by him very beneficial in the treatment of lupus; and Dr Whitehead treats lupus successfully with an ointment made of carbolic acid,—one half-draclm of acid to one ounce of spermaceti ointment. Several respectable surgeons speak favourably of its use as a lotion—one part of the acid to forty parts of water—in all kinds of fetid ulcers, gangrenous and offensive sores; and in necrosis it is said to promote the exfoliation of the dead portions of bone. Dr Calvert states that it is the most powerful preventive of putrefaction with which he is acquainted. He also states that it acts as an anti-ferment, and that he has proved this on an extensive commercial scale,—that it prevents the conversion of tannin into gallic acid and sugar. He also tells us that a few drops of this acid added to a pint of fresh urine will preserve it from fermentation or any marked chemical change for several weeks.

Carbolic acid is soluble in any quantity of glycerine, in twice its bulk of glacial acetic acid, in forty times its bulk of water, and forms with a solution of sugar a nice emulsion.

I shall now proceed to record some observations I have made as to its action in the Royal Infirmary.

I have tried carbolic acid as a disinfectant lotion in two cases in the Surgical Wards. In the first case, the patient, a young girl about 13 years of age, was suffering from a sloughing ulcer extending from the knee to the ankle. There was a large amount of discharge of the most fetid character. On the application of the carbolic acid as a lotion, one part of acid to forty of water, the very disagreeable fetor was completely destroyed. Nothing could

be more satisfactory than the complete manner in which the disgusting odour was dissipated. The lotion also acted as a stimulant to the part, which to a certain extent took on a healthy action, but in consequence of the amount of discharge exhausting the already very weak constitution of the girl, amputation was deemed her only chance of recovery, and this was accordingly performed.

The other instance in which I had carbolic acid applied as a lotion was in the case of a young man who had amputation performed at the middle of the thigh for malignant disease. Very soon after the operation, sloughing set in, accompanied with a fetid discharge. On the application of the lotion, the fetor, as in the first case, was most completely destroyed, the discharge lessened, the sloughs separated, and the parts beneath looked healthy. The lotion continued to be used for several days with the best results as far as its disinfectant and antiseptic qualities were concerned, but unfortunately the patient died, never having thoroughly recovered from the shock of the operation.

I next, along with Dr Smart, made a number of experiments on urine, to test the antiseptic property of carbolic acid, with the following results:—

First Series of Experiments.

1st, To ten ounces of diabetic urine I added *no* carbolic acid. After standing for five weeks I found a dense (one inch deep) fungoid mass on the surface of the urine, and the urine having a well-marked odour of decomposition.

2d, To ten ounces of diabetic urine I added one grain of carbolic acid. At the end of five weeks there was on the surface of the urine a fungoid scum a quarter of an inch deep, but no odour of decomposition.

3d, To ten ounces of diabetic urine I added three grains of carbolic acid. At the end of five weeks there was no fungoid mass or scum on the urine, which had a perfectly sweet odour.

4th, To ten ounces of diabetic urine I added five grains of carbolic acid. At the end of five weeks no fungoid mass on surface. Urine sweet, but with a perceptible odour of carbolic acid.

Second Series of Experiments.

To five specimens of diabetic urine of ten ounces each, I added the following quantities of carbolic acid, and at the end of three weeks the following were the results:—

1st, Of carbolic acid one grain. Urine perfectly free from fungoid mass, and odour perfectly sweet, but there was found a slight precipitate.

2d, Of carbolic acid two grains. Quite free from fungus, but having a deposit, and urine slightly hazy. Free from odour of decomposition.

3d, Of carbolic acid three grains. Deposit, with the urine hazy, but quite free from decomposition.

4th, Of carbolic acid four grains. Urine quite translucent, with a deposit less in quantity than in the other quantities of urine, and odour of carbolic acid perceptible.

5th, Of carbolic acid five grains. Urine perfectly translucent and quite free from deposit. Odour of urine sweet, with that of the carbolic acid distinct.

These two series of experiments conclusively show, that carbolic acid is a decided antiseptic,—that a very small quantity prevents for several weeks the odour of decomposition,—that a slightly-

increased quantity diminishes the amount of deposit, and that a very little more entirely prevents any recognisable change in the composition of the urine from taking place.

I shall next draw attention to a case of favus treated with carbolic acid in the Clinical Wards.

Peter Russel, æt. 14. On admission, head was found completely covered with favus crust, and on microscopic examination the parasite—*achorion Schönleini*—peculiar to this disease was discovered. The boy's head was shaved and then poulticed for two days. A solution of carbolic acid in glycerine (in the proportion of one part of the acid to twenty-five parts of glycerine) was then ordered to be applied to his head, morning and evening, and to be continued daily.

Before the application of this lotion the entire scalp was of a crimson colour, but under this treatment the colour of the scalp became gradually fainter, and at the end of five weeks distinct tracts of scalp quite free from redness were found, and the remaining parts were much paler in colour. The hair is now growing vigorously, and over the whole surface of the scalp not a trace of the favus crust can be detected.

The boy's general health is much improved since coming into the Hospital.

So satisfactory was the result obtained in the last reported case considered, that the same treatment is now being pursued in another case of favus, with this difference, that in this instance the lotion is stronger, being composed of one part of acid to fifteen of glycerine.

The young man, Peter Ward, æt. 17, has had the disease for nine years. On admission his head was covered with favus crust. The head having been shaved and poulticed, the above lotion was applied as in the former case, morning and evening. After being treated in this way for fourteen days the scalp was seen to be much less red and the hair growing vigorously. At the roots of the hair there are still small circumscribed patches of crimson scalp, but no trace of crust is to be found over the entire head.

In the foregoing pages I have made observations on four new drugs, all of which have been highly recommended. I suspect that at least three of them have been unsatisfactorily tested by those who speak in their praise. Be this as it may, the foregoing observations are the results of careful trials made in this Hospital; and I have only to state, in conclusion, that I have been as careful as possible to avoid mistakes in observation, and have been watchful not to overstate the results obtained.

ARTICLE IV.—*The Source of Hæmorrhage in a Case of Fibrous Tumour of the Uterus.* By J. MATTHEWS DUNCAN, M.D., F.R.S.E., Lecturer on Midwifery, etc., etc.

IT is not common to have an opportunity of examining the body of a woman dying from the anæmia produced by a fibrous uterine tumour. On this account, the dissection of the following case was

regarded by me with much interest, but I did not expect that its importance would turn out to be so great as it did. This importance arises from the very remarkable discovery of the source of the bleeding; and for the interesting observation being made, I am indebted to the presence of a small clot, whose decolorized end, not more than half a line in diameter, projected on the healthy, and to the naked eye, at first sight, apparently smooth and entire surface of the mucous membrane of the body of the uterus.

Miss G., a young woman, had consulted me in the spring of this year. She was very fat and anæmic, and it was easy to diagnose the presence of a fibrous tumour in the uterus. Its upper border reached to near the umbilicus, and it felt, as it was afterwards proved to be, of little above three inches in diameter. She complained of great menorrhagia, but was unaware of its cause. She left town to spend the summer by the seaside, and returned to Edinburgh in autumn.

I received a hurried message, requesting me to pay her a visit. On seeing her I felt sure she was dying, and this event occurred in a few hours afterwards. The only striking symptom was slightly bluish tint of the face, with deep laboured noisy (not stertorous) respiration. She had no complaint, and felt no special pain. Her skin, pulse, respiratory sounds, heart's action were nearly natural. For several days she had had no hæmorrhage; only, during the last two days of her life she had had a little show of brownish slimy mucus.

I am indebted to Dr Grainger Stewart for performing the autopsy, and for aiding me in making out the facts now to be recorded. Nothing very interesting was observed in the chest, etc. I shall confine my narrative to the condition of the uterus. The right ovary contained a cyst about the size of a walnut.

The uterus occupied the central region of the hypogastrium. Its upper margin was nearly on a level with the umbilicus. Its os was high in the pelvis. The cervix was hypertrophied, and measured by the extent of the arbor vitæ was elongated to a dimension of an inch and a half. A globular fibrous tumour, fully three inches in diameter, occupied the fundus uteri. It was moderately hard. Venous sinuses that would admit a small crowquill were seen permeating it in various directions. It projected downwards moderately into the deformed and expanded uterine cavity. It was everywhere surrounded by a covering of the proper tissue of the uterus, the layer between the tumour and peritoneum being more than twice as thick as that intervening between it and the mucous lining of the uterine cavity. The thickness of the latter layer was an eighth of an inch. In this layer of uterine tissue, especially in the parts adjacent to the tumour, there was developed a reticulation of enormous uterine sinuses, such as are observed in the same part in pregnancy. These were largest above and below the tumour, and contracted in dimensions as they approached the side of the uterus,

to emerge from it between the serous layers of the broad ligament. The uterine cavity was deformed and extended by the projection into it from above of the fibrous tumour. It contained a brownish mucus. Its mucous surface was pale, smooth, and healthy, and to a casual observer presented nothing but a little clot about the centre of the part projected by the underlying tumour. On inspecting this clot with a glass it was found to be protruded through a small round opening which it did not nearly fill. The opening was one-twelfth of an inch in diameter, and resembled somewhat the opening of a venous sinus exposed by separation of the placenta. A probe could be easily passed through it into the uterine sinuses already mentioned. The clot was of about two lines in length, and projected from an empty flat uterine sinus.

The source of the bleeding in cases of polypus and of menorrhagia, or metrorrhagia of all kinds, is variously described according to the theoretical views of the author accounting for it. In this case it would be equally unsatisfactory and unphilosophical to seek in such theories an explanation of the hæmorrhage. An evident and sufficient source is found in the large opening of a uterine sinus upon the surface of the uterine cavity. At first sight this source of hæmorrhage is more formidable than it really is, for the sinuses, though enormous potentially, have in ordinary circumstances very little real capacity, on account of their flat walls being almost if not altogether in proximity. It was only during the monthly congestion of the genital organs that blood found its way along the open sinus, and oozed out into the uterine cavity. At other times the sinuses were empty; or, if only nearly empty, oozing from them might be arrested by a little blood-plug in the orifice. Whether such an obstructing blood clot were present or not, increased impetus of the blood from any cause, or congestion induced by the erect position, or by one or more of many other causes, might re-establish the oozing and the metrorrhagia or menorrhagia.

On this case many important discussions might be founded; I shall only now suggest that the projection of the tumour into the uterine cavity may have led to the opening being formed where it was found, and that similar relations in other cases may explain the tendency to hæmorrhage when the tumour does so project or become polypoid, and *vice versa*. Further, the case appears to me to indicate the value of those hæmostatic measures which diminish the impetus of the blood, or moderate congestion in the pelvic viscera. Again, the source of bleeding, being in flat easily compressed venous vessels, leads to great value being placed on means that may restrain the hæmorrhage by compression, however this may be applied, whether from above, or by plugging from below, or by stimulation of uterine contraction by oxytocic medicines. The good results, if any, of incising the projecting parts of such tumours may also be explained

by the closure of some of the sinuses produced by the healing up of such incisions.

In the case just related, the hæmorrhages and the anæmia were much greater than are observed to result from losses in consequence of lesions of the papillary vascular loops in abrasions or ulcerations of the cervix, or from simple menorrhagia flowing from the larger venous vessels of the hypertrophied mucous membrane of the body of the uterus; and the source of the bleeding had a physical preponderance quite corresponding to these circumstances.

ARTICLE V.—*Reports of Cases of Amputation, etc., in which Acupressure was employed.* By ARCHIBALD HAMILTON, M.D., Carlisle Infirmary.

CASE I.—*Double Popliteal Aneurism. Treatment by Compression; Ligature of Femoral Artery; Hæmorrhage. Amputation of the Thigh; Hæmorrhage. Recovery.*¹

J. H., æt. 30, resident of Carlisle, admitted into the hospital, 22d February 1860, under the care of Mr Page. The patient, a strong, tall, and muscular man, served in the army for nine years, but was discharged last November. In the month of February 1859, he was seized with an acute pain in his right popliteal region, where at the same time a small tumour was discovered. Towards the end of the month it attained the size of a hen's egg. He at once entered the Military Hospital at Dublin, where the tumour was diagnosed as an aneurism, and treatment by compression was resorted to, and assiduously continued, until he says pulsation entirely left it, and he was free from pain. Last July, a similar tumour appeared in his left popliteal region, and he again repaired to the hospital at Dublin, where compression was adopted as before, and maintained for sixty days. He was discharged from the hospital on the 15th November, with the tumour very much reduced in size, but the pulsation in it, though weaker, still continued. In this condition he continued up to last Wednesday (15th), when a severe pain in the tumour and corresponding knee-joint attacked him, quite precluding him from using the limb. For this he applied for admission into the infirmary, which was granted.

22d February.—On admission, the leg and thigh were swollen and painful, the pain most severe in the vicinity of the knee-joint. A pulsating tumour as large as a hen's egg was discovered in the popliteal space, which on examination afforded distinct proofs of its aneurismal character.

28th.—Since admission, the patient has been kept very quiet in bed, with a flannel roller applied to the limb. The swelling and pain have become less urgent.

1st March.—Yesterday and to-day the swelling and pain have become aggravated. Compression had recourse to in the following manner:—The hair having been shaved off the upper and middle third of the thigh, a Signoroni's tourniquet was applied in the latter situation, and so adapted as to moderate the pulsation in the tumour. When the continued application of the instrument became painful, it was ordered to be replaced by a seven pounds weight placed over the vessel in the groin.

7th.—Pain and swelling considerably less. Pulsation decreased.

13th.—Tumour has again begun to pulsate more distinctly. Manual compression employed, and the tourniquet to be applied at night only.

¹ For the notes of this case I am indebted to Mr Devereux, formerly House-surgeon to the Cumberland Infirmary, now of Middlesex Hospital, London.

20th.—Compression had to be given up, as the whole limb became so painful that he could not bear it longer. Although made fully aware of the nature and urgency of the case, he still firmly objected to have the vessel ligatured.

21st.—Pain again subdued. Manual compression renewed.

22d.—This morning the pain has returned, and is more intense than before. The tumour has largely increased in bulk, and on its surface there is slight discoloration. 3 P.M.—The patient having at last consented to the operation, Mr Page placed a ligature on the artery five inches below Poupart's ligament.

22d.—Has been vomiting very much since the operation. Skin hot; great thirst; pulse 128. Ordered Mist. effervesc.

24th.—Much in same condition as last reported.

26th.—Feels better this morning; has taken some breakfast. No return of pulsation in the tumour. A small artery is felt pulsating over the centre of the tumour behind the knee-joint. The wound in the thigh appears healthy.

3d April.—Thirteenth day after operation, ligature came away. 3.30 P.M.—A sudden gush of blood took place from the wound. The amount of blood lost was estimated at about ten ounces. It flowed very rapidly, but was promptly controlled by placing a compress of lint on the wound, and retaining it there by a tourniquet. Another tourniquet was made to exert pressure on the vessel above. Patient cold; faint. Pulse 120, feeble.

4th.—No further hæmorrhage. The lower tourniquet was removed early this morning; the upper one has been occasionally withdrawn, and manual compression substituted. Pulse 120. The thigh is rather swollen. Thirst urgent. Bowels moved. Is taking six ounces of brandy and six ounces of wine daily.

7th.—Passed a good night; but this morning, without any movement or alteration of the position of the limb, hæmorrhage again took place. Pressure on the artery above the wound exerted but little control over it, and on examination it was clearly seen to come from the lower end, round which Mr Page passed a ligature, and thus arrested the flow. The upper end was felt distinctly pulsating, and being apparently stopped by a plug, was not interfered with.

8th, 12.15 A.M.—Hæmorrhage suddenly recurred, and was temporarily arrested by pressure of a pad over the wound and a tourniquet above. An hour afterwards the wound was exposed; and now the cardiac end, from which the bleeding was found to proceed, was likewise secured by ligature. Patient very faint. Great irritability of the stomach.

9th.—Very weak. Pulse 140, extremely small. Tongue furred. Vomiting very urgent, and not alleviated by any of the following remedies, each of which has been tried in succession,—Acid hydrocyanic, mist. effervesc., naphtha med., opium, morph. supposit., one and two grains. 3.30 P.M.—Complains of great pain over the swelling on the inner and lower part of the thigh, which was adverted to in the report of the 4th.

10th.—Notwithstanding his usual draught of one grain of mur. morph., he has slept very little. Vomiting still continues. Tongue furred. Pulse 136. The pain in the thigh, also implicating the knee, has increased in intensity. The swelling has increased, and is hot and painful when touched. It exhibits a dark coloured patch over its centre. Is having beef-tea and port-wine injections thrice daily.

11th.—Has passed a most restless night. Pulse 140. Vomiting as yesterday.

13th.—Vomiting less urgent. The swelling already noticed is increased; the discoloration more marked, and now deep fluctuation can be detected in it. Pulse 134, increased in strength since the 11th. Tongue clean. Bowels acted this morning. Is still taking six ounces of wine and the same of brandy.

15th.—Vomiting has much abated. Has slept well. The upper ligature came away this morning. Wound healthy. The swelling has enormously enlarged, and fluctuation is more distinct, but deep. Takes several eggs daily, and drinks large quantities of bitter beer in addition to his wine and brandy.

16th.—Slept well; but vomited his breakfast. Refuses everything but the bitter beer.

17th.—The swelling enlarging and extending upwards. Mr Page made a small incision into it, which gave exit to nearly a pint of foetid pus of a dark bloody colour.

18th.—Expresses himself as much relieved. Takes his food better. The lower ligature has separated, and a small amount of arterial blood has stained the dressings.

19th.—Progresses favourably. The wound made on the 17th discharges profusely. Pulse 130. Tongue clean. Bowels moved. Appetite improved. 10.30 P.M.—A sudden flow of blood again took place from the distal end of the artery, but was quickly arrested by pressure as before; about four ounces were lost.

22d.—Has gone on favourably since last report; but this morning blood was observed to escape from the incision made into the abscess. Direct pressure by a pad was again resorted to, and a tourniquet applied over the vessel above. Patient much reduced by this last flow. Has taken twelve ounces of brandy and twelve ounces of wine during the last twenty-four hours.

23d, 8 A.M.—Blood again escaped from the wound near the knee, and the swelling largely increased from retention of blood in the cavity of the abscess. Patient much collapsed. Is drinking large quantities of stimulants. 11 A.M.—Mr Page amputated the thigh at its upper third. After the operation the collapse was more marked. Pulse 140, very weak, and scarcely perceptible. To have beef-tea and brandy injections every four hours.

25th.—Has slept well. Takes almost no food by the mouth. Pulse 140. Stimulant injections continued.

27th.—Vomiting has ceased; but the injections appear to irritate the rectum. Injections to be discontinued. Pulse 130. Stump dressed this morning; looks well. No tension or pain. Not much union by first intention.

29th.—Progresses favourably.

30th.—Ligatures have separated; several of the sutures removed and plaster applied. Is taking eight ounces of brandy and six ounces of wine daily, with beef-tea, eggs, etc.

May 1st.—Another sudden but copious ejection of arterial blood occurred from the stump. A Signoroni's tourniquet was promptly adapted to the femoral, but not before twelve ounces of blood were lost. Patient blanched. Pulse 130, only perceptible. As the hæmorrhage was quite under control by the tourniquet, it was deemed more prudent to interfere no further at that time. 4 P.M.—On unscrewing the tourniquet, a copious flow threatened to take place, but was prevented by again tightening the instrument. The stump was now opened down, when it was found that only slight adhesion had taken place. The granulations had a full and flabby appearance. The end of the bone was of a remarkably white colour, and quite dead. On unscrewing the tourniquet, the source of the hæmorrhage readily made itself conspicuous, and was found to proceed from an artery behind the bone. An acupressure pin was now thrust through the lower flap, and placed in such a manner as to effectually compress the vessel against the bone. On this occasion, though an acupressure pin was resorted to, a ligature was also thought of, but it was evident that it could be applied neither so easily nor so effectually as the former, on account of the mass of large flabby granulations surrounding the bleeding orifice. Three-eighths of an inch of bone was at the same time removed. The flaps were now approximated by passing long pins through them, and securing them by twine applied in the same way as in the operation for hare-lip. This method was employed so as to afford every facility for the speedy undoing of the flaps in case of a recurrence of the hæmorrhage.

2d.—Weakness very marked. Pulse 140, feeble. Takes almost no food, but the same quantity of stimulants as before.

3d.—Has suffered much pain during the night. A considerable but slow flow of blood commenced last night, but was arrested by the tourniquet, which has been kept applied since. On removing it, the hæmorrhage recurred. 10.30 P.M.—Tourniquet removed; no bleeding. The part having been dusted with

French chalk, the instrument was replaced, as there was no sign of injury arising from its application. Is taking four ounces of brandy daily.

4th May.—Has slept well. Pulse 130. Appetite increased. On occasionally removing the tourniquet, the flow of blood has re-exhibited itself; but the instrument, now giving rise to some pain, has been removed. The stump was now opened down, and several large clots removed from its cavity; flaps readjusted.

5th.—Acupressure pin withdrawn. A slight but only occasional escape of blood has taken place.

6th, 9 P.M.—Hæmorrhage again returned. The flaps were again undone, when it was found that the bleeding arose from another vessel close to the one controlled by the pin on the 1st, but more inwards. An acupressure pin was employed for this vessel as in the case of the former one; the flaps adjusted in the same manner as before. Patient faint and blanched. Pulse 140, scarcely perceptible.

7th.—No recurrence of hæmorrhage. The vomiting has again begun to trouble him. He refuses to take any wine or brandy, but takes large quantities of bitter beer.

8th.—Has slept at intervals, and feels much better.

10th.—Much better in every way. The pin was withdrawn without any appearance of bleeding.

14th.—No more hæmorrhage has taken place. The patient is taking his food with some relish, and is making slow but favourable progress.

20th.—Healthy discharge from the stump. Patient fast gaining strength. Takes six ounces of wine and a pint of porter daily, and a mixture of quinine and steel has been prescribed.

15th June.—Much improved. Wound is healing rapidly.

1st July.—Wound closed. Is able now to sit up on a chair, and walk about the ward on crutches.

11th.—Discharged cured. General health much improved.

28th July 1863.—The patient now enjoys the most perfect health. He possesses a most excellent stump, and earns his own livelihood in Carlisle.

Examination of the Amputated Limb.—The following is the condition of parts found after the amputation:—An aneurism similar in size to an ordinary hen's egg occupied the popliteal region. It was filled with firm fibrinous layers. About an inch above this aneurism the artery was dilated to the size of a pigeon's egg, and the dilatation was flaccid, and contained no coagula, but had a rupture in it, which rupture formed a communication between it and a large cavity extending upwards for six inches from the popliteal space, on the inner side of the thigh, between the muscles and the bone. This cavity was filled with recently coagulated blood, which had evidently found its exit through the rupture in the smaller aneurism. The lower third of the femur, which bounded the cavity on one side, was rough and denuded of its periosteum. Four ounces of pus flowed from beneath the gastrocnemii on compressing the calf of the leg.

CASE II.—*Injury of Hand and Forearm. Profuse Suppuration. Hæmic. Hæmorrhage. Amputation of Arm at its Upper Third.*

R. S., æt. 49, carpenter, native of R., admitted into the hospital 22d February 1862, under care of Mr Brown. Three weeks ago, while at his usual work, the patient accidentally sustained a crush of his hand and forearm between two very heavy planks of timber. The only wound inflicted at the time was one on the outer side of the little finger, on which, however, from its seeming insignificance, he bestowed but little attention. No fracture was inflicted. The forearm and hand rapidly became swollen and painful, and from that time till now he has been applying poultices.

On admission.—Patient presents a very emaciated and feeble aspect, and is

perspiring profusely. His voice is exceedingly feeble, and he is much fatigued by his journey to the hospital. Pulse feeble, 110; tongue dry and furred; thirst urgent; bowels constipated. Says he has not been able to take any solid food for several days. He has been a very intemperate man, and is in the constant habit of taking large quantities of whisky. The forearm and hand are very red, painful, hot, and swollen; the redness and swelling extending midway up the arm. The fingers are flexed, and he has no power to extend them. There is an open wound on the outer and palmar aspects of the little finger, laying bare its tendons, which are sloughing. A probe introduced impinges on dead bone. Over the anterior surface of the wrist there is another large open wound, which exposes the sloughing tendons of the flexors. From both wounds there is given forth a profuse and foetid discharge of pus. Two ounces of brandy were administered immediately on admission. Bran poultices were applied, and the patient being put to bed, the arm was slightly raised by the inclined plane. Ordered common diet; wine, ten ounces; porter, one pint; one egg; also a mixture of quinine and acid.

23d.—A morphia draught was administered last night. He has slept at intervals. Bowels have been moved. He has perspired profusely during the night; pulse 110. The purulent discharge is still copious and offensive. The swelling and redness are extending up the limb, which has a puffy feel.

25th.—Yesterday and to-day, he has suffered from very urgent diarrhoea, which he feels to have weakened him considerably; for this he has been taking a mixture of nitric acid with opium; and a morphia suppository of one-half grain was substituted for his draught at night.

26th.—Patient has taken his food better this morning. His face is intensely flushed, and he still perspires. The quinine and acid are being administered. Pulse 120, feeble. The discharge continues the same, and the sloughing tendons are being thrown off. The poultices have been discontinued, and water dressing has been substituted.

27th.—Face still much flushed; sweating continues; the diarrhoea has returned; again ordered the nitric acid and opium mixture. *Vespere*.—Diarrhoea somewhat checked.

28th.—Diarrhoea has stopped; perspiration profuse; has not slept well; complains of increased pain in the forearm, the swelling of which has immensely increased. The whole limb pits on pressure.

1st March.—Hectic continues; is very restless, and occasionally delirious; pulse 130. Deep fluctuation is now distinct over the back part of the forearm, near the elbow. An incision being made into it, a large quantity of pus discharged. Poultices reapplied. The patient now complains of a very troublesome cough, to which he says he has been subject for the last twelve months. He expectorates much purulent matter. The chest was not examined; but the history he gave of his cough afforded no small grounds for the suspicion entertained of his labouring under phthisis. Is now taking fifteen ounces of wine, and four ounces of brandy daily. 1 P.M.—Hæmorrhage suddenly occurred from the wound on the anterior surface of the wrist. It was arrested by graduated compresses of lint applied directly over the wound, but not before nearly eight ounces of blood were lost. Patient extremely faint; pulse small, 130. Brandy, four ounces immediately. *Vespere*.—Patient somewhat rallied; pulse 125.

2d.—Hectic very marked. Has been wandering very much during the night. Hæmorrhage took place from the wound near the elbow, but stopped on raising the limb. The swelling and redness now extend to the upper third of the arm.

3d.—Condition very feeble. An incision was made this morning on the inner side of the arm above the elbow, which gave exit to a quantity of pus. Although yesterday afternoon the patient was made fully aware that further persistence in attempting to save the limb would be attended with the utmost danger to himself, he yet refused to have it amputated.

4th.—Condition weaker; pulse 135. Large quantity of discharge from the

incision made yesterday. The perspiration continues profuse, and the cough troublesome. Thirst urgent; has taken no stimulants since yesterday afternoon; takes large quantities of ice. A tendency to hæmorrhage from the wound made yesterday again manifested itself this morning, but the bleeding stopped on raising the limb, but not until several ounces had been lost.

5th.—Patient now expressed a wish for the operation, and Mr Brown removed the arm at the upper third by a Teale flap. Two vessels demanded attention, and were easily occluded by needles and wires, in the manner described by Professor Simpson in the *Edinburgh Medical Journal*, vol. vii., page 788. The flaps were brought together by wire suture, and the stump dressed with dry lint. *Vespere.*—Thirst urgent; sucks large quantities of ice; pulse 136, feeble; perspiration very profuse; has taken an egg beaten up with wine; is very restless, and wishes a draught. One drachm tinct. opii. was administered; bowels have acted.

6th.—Has been restless and delirious during the night; the perspiration continues; pulse 140; has taken an egg and a little tea for breakfast. For the last six days he has complained of a pain over the sacrum, and, notwithstanding every precaution adopted to prevent the occurrence of a bed-sore, a sloughing sore has formed, as large as the palm of the hand, from which he suffers very considerable pain. He feels better, however, to-day, since the introduction under him of a ring water-cushion.

7th.—Feels better this morning; has slept at intervals, and taken a good breakfast. Pulse 130. Skin still covered with profuse perspiration. Complaints of the pain in the stump; dressing undone; stump looks uncommonly well; no redness or tension present. There is no discharge; the flaps seem uniting kindly; and there is only a sero-sanguineous stain on the dressings. It being forty-four hours after the operation, one of the needles was withdrawn. Its corresponding wire, seeming to catch a little, was allowed to remain in the wound, along with the other needle, which secured the main vessel.

8th.—Patient expresses himself as very well; pulse 120. He still continues to perspire profusely. The slough on the back has separated, leaving a granulating surface. The stump dressed. A distinct line of union is established between the flaps along their whole length, except at the opening from which the wires emerge, which has discharged about a teaspoonful of pus. The wire allowed to remain yesterday was withdrawn to-day, and also the other needle, without the slightest trace of sanguineous oozing at the *seventy-second* hour. Several stitches were also removed. *Vespere.*—Dressings are stained at the outer corner of the stump with pus. The general emaciation, observable on his admission, is now even more marked, and his cough continues very troublesome. The chest was examined, and the following physical signs obtained:—Percussion over the right apex anteriorly and posteriorly, elicited well-marked dulness extending downward for several inches. Dulness is slight over the left apex. On auscultation of right apex expiration is prolonged; there is crepitation attendant on inspiration and expiration, and the vocal resonance is increased. Respiration lower down and on the left side is purile. Over the left apex the vocal resonance is increased. Sputa thick, muco-purulent, and sometimes bloody. Is taking no brandy, but fifteen ounces of wine, with one pint of porter. Ordered cod-liver oil.

9th.—Pulse 114; feeble, but stronger than last reported. Has taken his breakfast with relish. The slight discharge still continues from the opening about the diameter of a common lead pencil. At the outer corner next to this opening the adhesion of the skin has given way, only, however, for about an inch. The separation has not taken place through all the thickness of the flap, but leaves a small granulating sore. Along the rest of the line of incision the union appears complete. All the sutures removed, and plaster applied. The sore on back dressed with ung. zinci.

10th.—Sitting up in bed this morning, supported by a bed-chair; feels very weak. The sore on the back is progressing favourably. Perspiration still copious.

11th.—Progress very satisfactory. Ordered an expectorant mixture.

12th.—The small opening still exists, and gives out about two ounces of pus in the twenty-four hours. Red lotion is being applied to it.

14th.—Sweating not so profuse. Continues to take the oil. The sore on the back is healing fast. Wine reduced to eight ounces; the pint of porter continued.

25th.—Improvement has been marked, but gradual, since last report. The small opening still present. A probe introduced impinged on a small piece of loose bone, which was easily extracted by a pair of dressing forceps.

1st April.—The opening has now closed, and the stump is firm and well. Has been sitting up dressed for a little during the day.

10th.—The sore on the back has quite healed, and he is now only under medical treatment for his phthisis.

13th May.—Patient expresses himself as very well. The cough troubles him only in the morning. The sweating is now only occasional. Though still very thin, he has gained flesh. Since the 20th of last month, has been out walking daily in the grounds adjoining the hospital. Discharged; but entered as an out-patient on the medical books.

CASE III.—*Lacerated Wound of the Wrist, with Division of the Radial Artery.*

W. D., joiner, Silloth, æt. 16, admitted 16th April 1863. An hour previous to admission the patient, while at work, sustained a wound of his left wrist, or rather forearm, immediately above the wrist, from an axe. Immediately on its infliction the blood flowed rapidly in pulsatory jets. No surgical assistance being within immediate reach, the forearm was bandaged as tightly as possible, and the patient sent here by train. On admission, the patient felt faint, and complained of severe pain in the hand, which was much swollen, cold, and livid, from the tightness of the roller. Hæmorrhage continued to ooze through the dressings. On removal of the roller the pain ceased, and a wound of a severely lacerated character, extending transversely a little above the wrist-joint, and tearing off the skin, was exposed. Previous to undoing the dressings, a tourniquet was applied to the brachial vessel. On unscrewing the instrument, I found the radial artery had been cut quite across. Profuse hæmorrhage instantly threatened to take place, and did so in a continuous stream, if not immediately checked by the tourniquet. On sponging the wound, the cardiac end had largely retracted, and was not visible; the distal end, however, being quite distinct and tending to bleed freely, was at once secured by ligature. On slackening the tourniquet, I failed to secure the proximal end, owing to its great retraction. Instead, therefore, of attempting further to expose the artery, which operation seemed necessary if a ligature was to be applied, I passed a needle below the vessel, and secured it by the wire compress, not hesitating to include the adjacent structures. Very little pressure was found necessary to occlude the vessel. The skin having been torn away, and union being thus impossible, the wound was dressed with wet lint, the patient removed to bed, and the arm raised on the inclined plane.

17th.—Slight pain in and around the wound; wet lint continued. There has been no hæmorrhage.

18th.—Thirty-four hours after its introduction, the needle, with its wire, was withdrawn. No bleeding occurred. Some swelling and redness were present round the wound, which is discharging. Lot. plumbi diacetat. applied.

19th.—Is out of bed; wound gives forth a healthy discharge; redness and swelling are nearly gone.

21st.—Red lotion applied.

28th.—Ligature has separated; wound is fast healing.

5th May.—Healed. Patient discharged cured.

CASE IV.—*Lacerated Wound of the Leg. Amputation of the Thigh at its Lower Third. Needles removed at the twenty-fourth hour; hæmorrhage. Needles again used, and withdrawn at the sixty-ninth hour, without hæmorrhage. Recovery.*

J. M., æt. 5½, Carlisle, admitted into the hospital 25th August 1863, under the care of Mr Page. An hour previous to his admission the child was amusing himself in the street, by swinging on the back of a large railway goods waggon, while in motion. His leg in some way or other was caught between the wheel and axle-tree, and was so wedged in that half an hour elapsed before it could be extricated, which was not accomplished until the wheel was taken off the cart. On admission, the patient was found to have sustained a wound five inches in width at its broadest part, encircling the whole limb close below the knee, and encroaching considerably on the popliteal space behind, of a very lacerated character, having torn away the skin, muscles, and vessels, and exposing both bones of the leg. A general oozing of blood took place from the wound, but not to any great extent. The persons who conveyed the child to the infirmary stated that a large quantity of blood was lost previous to admission. The limb below the knee was cold, livid, and pulseless. The child was cold and faint. A teaspoonful of brandy was administered at intervals, and two hours after admission Mr Page amputated by a long anterior and short posterior flap at the junction of the middle with the lower third of the thigh. The main vessel and another were the only ones which demanded occlusion by the needles, which being speedily accomplished, the flaps were approximated by metallic suture, and the stump dressed with dry lint.

12 P.M.—Looks blanched, is exceedingly restless. Pulse 120. Has taken a little tea since the operation. A draught of eight minims of tr. opii was administered.

26th.—Has passed a very restless night. Vomiting at intervals. Has taken part of an egg, with some tea, for breakfast. No pain complained of in the stump. Twenty-four hours after the operation the dressings were only so far displaced as to bring the wires into view. Mr Page then withdrew both needles with their wires, when bleeding immediately occurred to the extent of about two ounces. The dressings having been promptly removed, and the stump well raised, the hæmorrhage ceased. There was no tension or redness of the flaps; no purulent discharge; the blood had escaped by the opening through which the wires protruded. Except at this point there was union along the whole line of incision by first intention. Four stitches were removed, and no further interference was deemed necessary.

27th.—Has been very restless during the night, constantly tossing about in his bed. Has vomited several times. Pulse 140. Very thirsty. Is taking two ounces of wine daily, with iced lemonade.

28th.—Much better; is very cheerful. Pulse 130. Skin cool. Vomiting has ceased. Sutures all removed. There is a distinct and well sealed line of union between the flaps for the whole length of incision. The small opening through which the wires protruded is nearly closed, from it there is a slight discharge of pus.

2 P.M.—(Forty-one hours after the withdrawal of the needles. The patient had been very restless previously.) Having been suddenly summoned to the ward I found that hæmorrhage had just then occurred, and was flowing rapidly. Manual compression of the femoral, and raising the stump caused it to cease; but on removal of the former it flowed with equal rapidity as before. Having adjusted a tourniquet over the vessel high up, I forcibly tore asunder the flaps which were adherent from end to end, except at the small orifice by which the blood escaped on the 26th, then clearing out some newly-formed clots, exposed the bleeding orifice, which proved to be that of the popliteal. I then passed a needle under it, and secured it in the usual manner. The hæmorrhage being completely checked, the flaps were approximated by four points of wire suture. On this occasion it was calculated that between four and five ounces of blood

were lost. During the time occupied in arresting the hæmorrhage, wine was administered. The bowels also freely operated, apparently involuntarily. Patient cold and faint. Pulse 130. Very weak. Hot bottles were applied, and he was ordered a teaspoonful of wine every half-hour in a little warm water with sugar.

29th.—Much better than could be looked for. Pulse 120, feeble. Tongue clean. Has taken an egg and tea for breakfast. Stump not touched. Ordered two ounces of wine daily.

30th.—Pulse 120, of fair strength. Takes his food well. Stump dressed. A small part of the margin of the lower flap is discoloured, and evidently sloughing, but to a trifling extent.

31st.—Sixty-nine hours after its introduction, the needle was withdrawn, without the least appearance of bleeding. Pulse 110. Appetite excellent.

1st Sept.—The slough has separated. Stitches removed, and plaster applied. Pulse 96. Tongue clean. Skin cool. Bowels moved.

2d.—Wound has a healthy appearance, and is discharging pus, but not in great quantity. Has slept well, and breakfasted heartily.

3d.—Progresses favourably. Wound healing rapidly by granulation. Strapping removed.

4th.—Pulse 84. Is gaining flesh.

5th.—Extent of sore fast decreasing. Ordered half a pint of porter daily; to omit the wine.

6th.—Progress still satisfactory.

7th.—Pulse 76. Bowels moved.

10th.—Is sitting up to-day on a chair, dressed.

20th.—General health excellent. Wound nearly closed.

29th.—Wound healed. Has been up every day since the 10th. Uses crutches.

Oct. 14th.—Discharged cured, with an excellent stump.

CASE V.—*Compound Comminuted Fracture of the Leg. Amputation below the Knee.*

J. M., æt. 11, admitted June 21, 1861, under the care of Mr Page. This morning, while at work on the new North British line of railway, near Canonbie, two waggons accidentally passed over his leg. He arrived at the hospital at 8 P.M. On examination, the unusual amount of comminution of the bones, the lacerated state of the adjacent structures, and the slow hæmorrhage which was taking place, left little doubt as to the propriety of removing the limb. Amputation was therefore immediately performed by Mr Page, below the knee. The hæmorrhage was controlled by an acupressure pin, so applied as to compress the anterior tibial vessel. No other arteries demanded interference.

23d.—Since the operation, with the exception of occasional vomiting, the patient has not experienced a bad symptom. He has taken his food well, and has had four ounces of wine daily. Dressings removed. There is only a sero-sanguineous stain on the dressings, and union is evidently progressing by first intention. Forty-eight hours having now elapsed since its application, the pin was removed without a trace of hæmorrhage.

24th.—The boy feels almost quite well, he says. All the sutures removed, and a strap of plaster applied as a support. There is merely a slight purulent stain on the dressing. This small amount of matter escapes from beneath the scab covering the line of union of the flaps.

25th Aug.—Since last reported, on the 24th of June, the patient has rapidly recovered. The amount of pus discharged from the cicatrix was quite insignificant; the wound healing by first intention from end to end. He has been discharged from the hospital to-day in the enjoyment of most excellent health.

CASE VI.—*Ulceration of the Cartilages of the Knee-joint; Amputation of the Thigh at its Lower Third.*

The patient, æt. 50, had for nearly two years been suffering from ulceration of the cartilages of his left knee-joint, which had some time ago advanced to suppuration. The constitutional symptoms had become so aggravated and formidable, that no hope of recovery without amputation was entertained. Accordingly, about two months ago, he repaired to a large hospital in Scotland, with the view of having his limb amputated, which he says was refused to be done on the ground of his being in too feeble a condition to admit of its performance. After having remained in the hospital several weeks, he returned to his home at W., and, shortly after, feeling himself a little stronger he resolved to risk the operation. On visiting him with Mr Brown on the day of operation, his condition seemed anything but encouraging. He presented a feeble, pale, and emaciated appearance. Pulse 100, of fair strength. The leg was firmly flexed on the thigh, and to such an extent that a piece of bandage or cotton wool could only with much difficulty, and considerable pain to the patient, be introduced between their posterior surfaces. Two sinuses were present, one on the posterior aspect, a little above the joint, and another on the outer side. Both discharged profusely, and the pus was of a very offensive character. Owing to the position of the sinuses and the extremely flexed condition of the joint, Mr Brown deemed it a most appropriate case for amputation by Teale's method at the lower third of the thigh. Amputation in any other manner, to be satisfactorily performed, would have necessitated division of the bone higher up. Chloroform having been administered, and a tourniquet adapted so as to control the femoral artery, Mr Brown amputated in the manner previously determined upon. In arresting the hæmorrhage, which during the whole operation could not have amounted to more than two ounces, the main vessel was first secured by the needle and compress. Four other vessels of considerable calibre were then likewise easily occluded. The bleeding having been thus entirely suppressed, the flaps were brought into apposition by means of metallic suture. The line of junction of the flaps was interrupted in its middle by the orifice of the posterior sinus, through which the incision for the inferior flap had passed; this opening, however, effected a free drain for any matter. *Vespere*.—After the operation, one grain of opium was given the patient, since which he has been quiet, though not asleep. He now complains of headache and pain in the leg.

18th.—Expresses himself as better; headache gone; skin moist; pulse 120; tongue rather furred. 10 P.M.—Pulse 130; opiate draught administered.

19th.—Has had rather an uneasy night, but is now more comfortable, and has breakfasted well; bowels moved. 4 P.M.—*Forty-eight hours* after the operation. The dressings, which were stained with purulent discharge, were undone. Nothing could be more satisfactory; no tension or redness present; the union of the flaps by first intention was progressing kindly; the discharge, which was of a fetid character, escaped through the posterior sinus, and by the opening through which the wires emerged. The needles were now all withdrawn, without the slightest trace of hæmorrhage. Patient feels well. Pulse 120, of good strength; skin cool; tongue clean; appetite good; is having four ounces of brandy daily. Ordered a mixture of quinine and iron.

19th.—Pulse 110. No complaint.

20th.—Progress favourable.

21st.—Pulse 96. Appetite improved. The discharge is now small, and only comes from the sinus; and, with the exception of this spot, the line of union from end to end is complete. The opening which afforded exit to the wires has quite closed.

24th.—Marked improvement in every respect. Discharge scanty.

26th.—Yesterday and to-day has complained of a little pain in the stump, attributable most probably to the formation of pus, as a large quantity of matter is now beginning to be discharged from the opening.

28th.—Rapidly gaining strength.

30th.—Discharge almost ceased.

4th Oct.—Within four weeks after the operation, the patient was able to be dressed and down stairs. Within six weeks, he was able to drive out in his gig daily. He now enjoys general good health, and is rapidly recruiting his lost strength.

CASE VII.—*Caries of the Bones of the Leg and Foot. Amputation of the Thigh at its Lower Third.*

J. A., æt. 13, native of Penrith, admitted into the Carlisle Infirmary, Sept. 30, 1863, under the care of Mr Brown. The patient, of a highly scrofulous and weak appearance, has laboured under the above disease for upwards of two years. A large number of suppurating sinuses are situated over the foot and leg. The tarsus and metatarsus are extensively carious, and the disease affects the leg up to within half an inch of the knee-joint. The bone in its entire length is much expanded.

10th October, 5 P.M.—Mr Brown amputated by Teale's method, at the lower third of the thigh, dividing the femur immediately above the condyles. The bone when divided was soft, and presented rather an unhealthy appearance. The popliteal artery was secured by a needle and compress, and the popliteal vein, giving rise to an unusually large amount of venous hæmorrhage, was also occluded in the same manner. No other vessels required interference. The flaps were brought together by suture, and two pads were adapted, for their support, to either side of the stump by means of a roller. No dressings were applied to the wound. 10 P.M.—Has been sick at intervals; is very restless. The bandage at one corner is stained with blood. Pulse 130. Is drinking iced lemonade. An opiate draught administered.

11th.—Patient as well as could be looked for. Pulse 140. Has taken an egg and tea for breakfast; has slept, but not much. No pain is complained of in the stump. The line of junction of the flap is quite dry, and the edges are uniting. There is no discharge of any kind. Wine, four ounces.

12th.—Pulse 135, of fair strength. As his bowels had not been moved since the day of operation, an aperient injection was administered this morning, after which they acted copiously. Appetite good. Has had a chop for breakfast. The vertical lines of incision on both sides are dry and healed, so also the left half of the transverse wound. From between the edges of the right half there is a slight discharge of unhealthy pus, and at several of the sutures there are small points of discoloration. Three sutures were removed.

13th.—Has slept and breakfasted well; face rather flushed. Pulse 130. Complains of no pain. The purulent discharge still continues from the outer side of the stump. A line of discoloration has appeared along the margin of the upper flap. The needles were now removed (sixty-six hours after their application) without a trace of hæmorrhage. 10 P.M.—Very restless. Opiate draught ordered.

14th.—Has taken no breakfast. Pulse 156. Skin hot and thirst urgent. Wine, eight ounces.

15th.—Greatly improved since yesterday. Pulse 126, feeble; skin cool and moist; bowels moved; appetite improved. The sloughing portion is separating, but leaves abundance of flap.

16th.—Pulse 130. Strips of plaster were now employed to support and approximate the flaps, and red wash applied to the granulating surface.

17th.—Pulse 120. Appetite not so good. Ordered a mixture of quinine.

18th.—Much better this morning; the discharge is healthy, and the flaps are rapidly uniting. Is sitting up in bed.

20th.—Pulse 110. Appetite good; healthy and rapid granulation taking place.

24th.—Is very anxious to be allowed to get up; his request of course being refused. Healing process is progressing with unusual rapidity. General health good.

25th.—Has been sitting up this morning.

November 30th.—Discharged with an excellent stump.

The subjoined Table presents the results of the larger Amputations performed at the Carlisle Infirmary from Jan. 1861 to Oct. 1863.

No.	Name.	Age.	Nature of Disease or Injury.	Date of Amputation.	Amputation, where performed.	Means adopted for arrestment of hæmorrhage.	Date of the withdrawal of Needles.	Occurrence or non-occurrence of Hæmorrhage.	Result.	Date of Discharge or Death.
1	D. C.	21	{ Gangrene after comp. frac. of leg, 14 days bef.	{ Jan. 9,	Below the knee.	Needles.	64 hours.	No hæmorrhage.	Recovery.	Feb. 27
2	J. S.	20	Comp. com. fract. of leg.	May 1	Below the knee.	Needles.	Not noted.	No hæmorrhage.	Death.	May 9
3	J. R.	13	Disease of ankle-joint.	Mar. 23	At ankle (Syme).	Needles.	Not noted.	No hæmorrhage.	Recovery.	May 28
4	J. L.	32	Comp. com. fract. of leg.	Feb. 29	Below the knee.	Not noted	...	No hæmorrhage.	Recovery.	June 3
5	T. C.	11	Comp. com. fract. of leg.	June 21	Below the knee.	Needles.	48 hours.	No hæmorrhage.	Recovery.	Aug. 28
6	J. S.	19	Gangrene of foot and leg.	June 27	Below the knee.	Needles.	48 hours.	No hæmorrhage.	Recovery.	Aug. 21
7	J. M.	24	Gangrene of the foot.	July 24	At ankle (Syme).	Needles.	Not noted.	No hæmorrhage.	Recovery.	Oct. 3
8	A. T.	60	Injury of arm.	Aug. 22	Upper third of arm.	Ligatures.	...	No hæmorrhage.	Recovery.	Oct. 3
9	P. M.	19	Comp. com. fract. of arm.	Oct. 25	Middle third of arm.	Ligatures.	...	No hæmorrhage.	Recovery.	Nov. 20
10	T. N.	14	Disease of tarsus.	Dec. 10	At ankle (Syme).	Ligatures.	...	No hæmorrhage.	Recovery.	Jan. 22
11	J. H.	35	Dis. of ankle and leg, etc.	Nov. 8	Below the knee.	Ligatures.	...	Hæmorrhage on 9th d.	Death.	Nov. 19
12	J. M.	22	Comp. com. fract. of legs.	April 1	Below the knee.	Ligatures.	...	Hæmorrhage on 8th d.	Death.	April 8
13	J. H.	50	Gang. of leg after injury.	April 25	Below the knee.	Ligatures.	...	Hæmorrhage on 5th d.	Recovery.	Aug. 6
14	F. C.	9	Disease of knee-joint.	May 8	Lower third of thigh.	Ligatures.	...	No hæmorrhage.	Recovery.	July 9
15	T. Q.	15	Injury of feet.	July 17	Both legs, low. third. {	Ligatures & needles* {	} 60 hours.	No hæmorrhage.	Recovery.	Dec. 3
16	J. P.	22	Disease of ankle-joint.	Dec. 2	At ankle (Syme).	Ligatures.	...	No hæmorrhage.	Recovery.	Jan. 28
17	J. B.	11	Disease of ankle-joint.	Dec. 2	At ankle (Syme).	Ligatures.	...	Hæm. slight on 2d day.	Recovery.	April 8
18	J. C.	17	Comp. com. fract. of legs.	April 18	Below the knee.	Ligatures & needles.	} 48 hours.	No hæmorrhage.	Death.	May 14
19	R. S.	49	Injury of arm.	March 5	Upper third of arm.	Needles.	44 & 72 hrs.	No hæmorrhage.	Recovery.	May 13
20	J. M.	5	Wound of leg.	Aug. 25	Thigh, lower third.	Needles.	24 hours.	Hæmorrhage.	Recovery.	Oct. 14
21	W. N.	47	Com. com. fract. of thigh.	July 26	Thigh, middle third.	Needles.	...	No hæmorrhage.	Death.	July 26
22	J. R.	15	Comp. fracture of leg.	Sept. 1	Below the knee.	Needles.	64 hours.	No hæmorrhage.	Death.†	Sept. 29
23	W. C.	15	Wounds of arm.	Sept. 3	Upper third of arm.	Ligatures.	...	No hæmorrhage.	Recovery.	Sept. 30
24	J. W.	35	Comp. com. fract. of arm.	Sept. 29	At shoulder-joint.	Ligatures.	...	No hæmorrhage.	Death.	Sept. 30
25	J. A.	14	Disease of leg and foot.	Oct. 10	Below the knee.	Needles.	66 hours.	No hæmorrhage.	Recovery.	Nov. 30

* Ligatures were employed in the amputation of one leg and needles in the other.

† Lost much blood prior to admission.

Part Second.

REVIEWS.

Army Medical Department : Statistical, Sanitary, and Medical Reports for the Year 1861. Presented to both Houses of Parliament by Command of Her Majesty. London : Harrison and Sons : 1863.

THE Blue Book of the Army Medical Department, which is now published every year, is divided into three parts,—the Statistical, the Sanitary, and the Medical. The first is produced under the superintendence of Dr T. Graham Balfour, Deputy Inspector-General; the second is edited by Dr Logan, Inspector-General; and the third by Dr Mapleton, Deputy Inspector-General of Army Hospitals. The three reports make up a bulky octavo volume of 550 pages, the price of which is only five shillings; and whether we look to the statistical, the sanitary, or the more purely medical information contained therein, we must allow that the work is one of the cheapest ever issued from the press.

The value of a correctly drawn up statistical report of the numbers, composition, sickness, and mortality of our army can scarcely be over-estimated, even if we regard the welfare of the soldier solely from the utilitarian point of view. The army is such a costly machine, and so much of our material prosperity, as well as of our influence and prestige as a nation, depends, or may, at almost any time, depend upon its efficiency, that whatever has a tendency to elevate or to depress it in this respect, whatever also purports to give us information concerning it, deserves to be scanned with the most jealous scrutiny. It is right, therefore, to approach the examination of these reports in a somewhat sceptical spirit, and not to accept their conclusions until after due investigation. The Statistical Report especially requires to be sifted in this manner, owing to the proverbial difficulty of deriving just conclusions from merely numerical data. "Tables," it has been well said, "are like cobwebs, like the sieve of the Danaides; beautifully reticulated, orderly to look upon, but which will hold no conclusion. Tables are abstractions, and the object a most concrete one, so difficult to read the essence of. There are innumerable circumstances; and one circumstance left out may be the vital one on which all turned."

During the last few years there has arisen a very general belief, that the sickness and mortality of our army previously to the war in the Crimea almost exceeded the wildest dreams of the imagination; but that since that period, and mainly through the exertions of Lord Herbert and Miss Nightingale, the soldier's occupation has been stripped of its dangers, and that his health is even better now

than that of the class from which he sprang. We must confess that the evidence in favour of this opinion has never seemed to us entirely satisfactory. That the mortality of the army is less now than it was ten, twenty, or thirty years ago, there is perhaps sufficient proof; but we question whether the reduction has been so sudden, so great, so real, or so entirely dependent upon what are called sanitary improvements, as certain writers in the daily and weekly press would have us to believe. It must be confessed, however, that Dr Balfour's reports have had a tendency to lead one to such a conclusion. In his first Report, viz., that for 1859, for example, it was stated that there was "a remarkable and most satisfactory reduction in the amount of mortality in all classes of troops; indeed, except in the *dépôt* battalions," it was said to be "little above that of the civil population in the healthiest districts of England." In 1860, a similar satisfactory condition was reported; and in the Report for 1861, which we now have under review, a still further reduction of mortality is alleged to have taken place. Dr Balfour also contrasted the mortality of the British army in 1859 with that of the period from 1836 to 1847; and because the death-rate in that year was considerably less than the average of the decade, many of our contemporaries and a great portion of the public have taken it for granted that the reduction was entirely the work of Lord Herbert, Miss Nightingale, and the somewhat noisy band of amateur sanitarians who followed in their train. On this point we consider that a great injustice has been done to the medical profession, because the alleged diminution in the rate of mortality occurred before the special sanitary duties of medical officers, instituted by the new code of regulations, were generally entered upon, and before the recommendations of the Sanitary Commission, with respect to the barracks and hospitals, were carried into effect.¹

A reduction in the rate of mortality, in fact, generally depends upon many concurrent causes, and not upon one only; whilst, therefore, we are far from denying the efficacy of a rigorous hygiene, we contend for the importance to be ascribed to advances in pathology and therapeutics. A great deal has recently been written about the prevalence of venereal diseases in the army, and the mortality that ensues from them; but if syphilis proves fatal now, what must it have done in the period from 1837 to 1846, when, to give a full diet to a soldier affected with venereal disease was contrary both to practice and precedent in the military service, and when the use of mercury was so imperfectly understood, and its abuse so common? Our sanitarians have not as yet made any impression upon the numbers admitted to hospital for this class of complaint; but we have good grounds for believing that improved treatment has greatly reduced the disability and mortality arising from it. Again, at the military stations in tropical countries, very

¹ Vide Dr Logan's Sanitary Report for 1859.

little has been done by the sanitarians, so far as we can discover, calculated to prevent sunstroke, dysentery, and certain forms of fever; yet we know that these diseases have become much less fatal of late years, owing simply to improved methods of treatment. It is wrong, then, to conclude that the reduction of mortality in the army, which has happily been effected, is to be ascribed solely to the labours of a few enthusiasts. It would be more correct, speaking broadly, to assign a diminution in the number of admissions to the agency of sanitary measures, and a reduction of the rate of mortality amongst the admitted to the greater efficacy of purely medical science.

Of course, Dr Balfour is not to be held responsible for the mistakes of the sciolists who are so fond of dabbling in medico-military matters; we cannot, however, acquit him of a tendency to exhibit the present condition of the army in a more favourable light than the facts would seem to warrant. Thus, in the first table of the Report for 1861, the ratio of deaths per 1000 of mean strength, of the troops serving at home, is represented as having been 9.95 in 1860, and only 9.24 in 1861; and the tables on pages 12 and 13 would lead to a similar conclusion if we did not mark the fact, that a practice prevails in the army of weeding the rank and file of their diseased lives, and that this process of discharging those who have become incapable of further service is called *invaliding*. We then naturally endeavour to discover what influence may have been exercised upon the death-rate by a difference in the amount of invaliding, but we regret to observe that the information on this head is neither so full nor so satisfactory as might have been expected. Dr Balfour is aware that invaliding affects the rate of mortality, and shows its influence, so far as may be done, by calculating the number of deaths amongst those of the invalids of the household cavalry, of the dragoons and dragoon-guards, of the royal artillery, the military train, foot-guards, and infantry regiments, who were placed on the pension list in the previous year; and his conclusion is, that the mortality of the cavalry and foot-guards was increased in 1861, whilst that of the artillery, military train, and infantry underwent a decrease. We can scarcely accept his conclusion, however, without objecting, not only, as he himself admits, that his calculation takes no note of the men discharged without claim to pensions, but also that one year is too short a period to refer to for the information required; and farther, that by omitting the results, whatever they may have been, of the invaliding from the dépôts, he has neglected perhaps one of the most important items. We are inclined to think that invaliding has a greater effect upon the rate of mortality than Dr Balfour makes it appear, for, if we take the numbers afforded us by the table on page 12, we find that in 1860 the mortality amongst those of the troops above-mentioned who were serving at home averaged 8.61 per 1000, and in 1861 only 7.62; but then, if we take the trouble, we may discover that only 21.50 men per 1000 were invalided in 1860, whereas as many as

33·35 per 1000 were invalided in 1861 in these same corps. So that an increase in the rate of invaliding of 11·85 per 1000 was coincident with a diminution of mortality, amongst those remaining in the service, of no less than ·99, or nearly one per 1000; and it seems difficult to avoid the conclusion, that, if the rate of invaliding had been the same, there would have been no reduction of the death-rate in 1861.

If now we turn our attention to the influence of age, or rather to the combined effects of age and military service, upon the mortality, we shall find additional evidence in support of the views we have expressed. Dr Balfour asserts that the mortality of the troops serving at home, exclusive of the dépôts, only slightly exceeds that of the civil male population of similar age, even in the healthiest districts. But why should the dépôts be excluded? Is it not possible, nay, even probable, that by adopting this principle of excluding the most unhealthy corps, or by overlooking the effects of invaliding, a body of troops might at any time have been presented whose death-rate would have been less than that of the civil population? But we should imagine, that if the mortality of the dépôts were not estimated with that of their respective regiments, no correct deductions as to the real amount of sickness and mortality in the army could possibly be made. The household brigade have, however, no depot, properly speaking; and as they have no foreign service, except in time of war, their rate of mortality and invaliding will indicate pretty nearly the effects of military service at home. The following table, compiled from those on pp. 26 and 27 of the Report, will elucidate this part of the subject:—

1861.		Annual Ratio of Deaths per 1000 living at the following Ages :						Invalided. Ratio per 1000.
		Under 20	20-24.	25-29.	30-34.	35-39.	40 and upwards.	
Household Brigade.	Household	...	3·12	13·29	5·43	6·17	34·01	8·2
	Cavalry, ¹	...	8·40	10·35	11·42	21·51	...	28·2
	Foot Guards,	...	...	...	...	...	...	...
Troops generally (including dépôts) at home stations,		3·21	7·10	8·45	13·40	12·38	33·54	42·23
Civil Male Population.	Healthy districts,	5·83	7·30	7·93	8·36	9·	9·86	...

¹ The average strength of the household cavalry being only 1219, the figures concerning its mortality are less trustworthy than when larger numbers are dealt with, as in the foot-guards and troops generally.

With the results of this table before us, and bearing in mind the observations we have made concerning the influence of invaliding in reducing the death-rate, we think it will be admitted, that whatever may hitherto have been done to improve the health of the soldier is very far short of that which yet remains to be effected. All our soldiers are picked men, but the guards are the *crème de la crème*. They are subjected neither to great changes of climate, nor to unhealthy climates, nor to privations in bad seasons; they live in comparatively healthy districts, and yet their mortality exceeds that of the civil male population. Surely, under such circumstances, it is somewhat premature to sing pæans in celebration of our victory over death and disease. We ought not to cry "Peace, peace, when there is no peace;" or to "Rest and be thankful" whilst such a large amount of sickness and mortality prevails among the most select and most favoured of our troops. On the whole, we believe that Dr Balfour has prepared his report with the utmost care, still we cannot help noticing that it is not always easy, or possible, to reconcile his tables one with another. At page 5, for example, the average strength of the army serving at home in 1861, is stated at 88,955, with 822 deaths; but we look in vain for the sources from whence these numbers are derived. At page 12 the average strength is figured at 83,542, with 731 deaths; and these numbers are corroborated by the other tables, so that there are 5013 men and 91 deaths, concerning which we are left in the dark. Again, at page 26, the number discharged as invalids from the troops serving at home, is stated at 4554; but neither there nor elsewhere can we discover from what corps more than 3781 of these have been discharged; the remaining 773 are nowhere accounted for.

Turning aside, however, from the unwelcome task of exposing these defects, we have pleasure in observing the large amount of valuable information which the Report contains, of a kind that will be found useful to the civil as well as to the military medical practitioner.

The dockyards and arsenals and the seaport towns are observed to be the most unhealthy of the home stations; Dublin, London, and the large manufacturing towns, come next; and then the camps. The miasmatic diseases occur very nearly in the same order.

The ratio per 1000 of admissions for venereal complaints was,—in Manchester, 487; at Portsmouth, 485; at Plymouth, 470; at Woolwich, 399; at Aldershot, 361; at Dublin, 363; at Edinburgh, 260; at Fermoy, 195; in London and Windsor, household cavalry, 135, foot-guards, 328. "The admissions into hospital by this class of diseases have amounted to 354 per 1000 of the strength;" and in the proportion of 209 for syphilis, and 144 for gonorrhœa. "The average period in hospital is found to be,—of primary syphilis, 25·70 days; of secondary, 27·73 days; of bubo, 35·35 days; of gonorrhœa, 18·77 days; of swelled testicle, 17·80 days; and of stricture of the urethra, 29·90 days." With respect to the average

period in hospital for primary syphilis, we suspect that the cases of primary and secondary syphilis are not always kept entirely distinct one from the other, and that the average of 25 days for primary syphilis is in reality considerably above the mark.

The tubercular diseases cause by far the greatest amount of mortality amongst the troops serving in the United Kingdom, and they are more frequent in the foot-guards than in any other corps.

Diseases arising from intemperance seem to be diminishing, both in amount and fatality.

During the year, 2053 soldiers and 4395 recruits were vaccinated, with the following results:—

Class.	Results (calculated in ratios per 1000).	In those who bore marks of previous Small-pox.	In those who bore good marks of previous Vaccina- tion.	In those who bore doubtful marks of previous Vaccina- tion.	In those who bore no marks of previous Vaccination or Small-pox.	Total.
Soldiers {	Perfect pustule	451·4	484·6	236·8	326·	430·6
not {	Modified do.	159·6	157·4	505·3	277·5	218·7
Recruits {	A failure in	389·	358	257·9	396·5	350·7
Recruits {	Perfect pustule	345·5	407·3	461·3	527·3	415·5
{	Modified do.	266·8	240·8	301·3	202·6	242·5
{	A failure in	387·7	351·9	237·4	270·1	342

From this table one of two things is sufficiently clear. If it be true that the capability of developing a perfect vaccine pustule is a measure of the susceptibility of the system to the small-pox poison, as most authorities maintain, then vaccination, and even small-pox itself, affords but little security against subsequent attacks of small-pox; or else the distinction between the perfect and the modified vaccine pustule is but little recognised by the medical officers of the army—a conclusion which we think much the more probable.

Recruiting.—Of 12,191 recruits inspected, England furnished 6237; Wales, 235; Scotland, 1899; Ireland, 3742; British Colonies, etc., 78. Of these, 4600 were rejected, viz., 2257 English; 60 Welsh; 778 Scotch; 1476 Irish; and 29 Colonial—the proportion being highest in the Scotch, and lowest in the Welsh and English; and it is added, that “upwards of two-fifths of the rejections were for causes indicative of ill health or feeble constitution, and one-fifth for defects which would have affected the marching power of the men.”

Previous Occupations of the Men serving in the Army.—In the army, on the 1st of January 1860, there were 2655 bakers; 2527 blacksmiths; 2886 smiths generally; 1976 bricklayers; 2144 masons; 5032 tailors; 7404 shoemakers; 4001 carpenters; 937 cabinet-makers; 2146 painters; 1762 butchers; 1162 gardeners; 1197 printers; 244 druggists; 600 attorneys' clerks; 4078 commercial clerks; 31,115 agricultural labourers; 69,861 labourers of

branches undefined; etc., etc. We should imagine that an army so composed ought to be well able to take care of itself under almost any circumstances; for there is ample material in it wherewith to furnish troops equal, if not superior, in intelligence and skill, to those of any other army in the world.

Of the foreign stations, we find that Bengal was the most fatal to the British soldier—the death-rate in that presidency having been 45·57 per 1000 of mean strength. In Bombay it was 24·72, and in Madras 15·83, per 1000. In China it was 20·19; in Ceylon, 19·85; in Australia, 15·44; at the Mediterranean stations it was about 11 per 1000; at the Cape, 10; and in Canada, 9·42. In India and China the high rate of mortality was caused principally by disorders of the abdominal viscera (cholera, dysentery, hepatitis, etc.), and by remittent and intermittent fevers. At the Mediterranean stations, fever, continued and remittent, and tubercular diseases, were the two chief causes of death.

From the various tables in this Report we have also gathered, that the average strength of the British army at home and abroad, in 1861, was 196,316, and that the deaths numbered 3675, or in the ratio of 18·72 per 1000; also, 6041 men were invalided, giving the ratio of 30·77 per 1000. Adding, then, the deaths and the number of invalids together, we have 49·49 per 1000 as the rate of expenditure in 1861. In the review of the Army Medical Reports for 1860, which appeared in this Journal in February last, the death-rate for that year was stated to have been 19·9 per 1000, and the rate of invaliding 13·1 per 1000,—the total waste of men being 33 per 1000. Consequently, although the actual number of deaths that occurred in the army in 1861 was less than in 1860, the conclusion seems well founded, that the reduction in the rate of mortality was almost entirely attributable to the greater extent of invaliding.

Having devoted so much of our space to the examination of the Statistical Report, our comments upon the Sanitary and Medical Reports must necessarily be very brief.

The object of the Sanitary Report is to show the condition of the barracks, hospitals, huts, and camps occupied by the troops; to note their defects, and to record what may have been recommended for their improvement; to mark the influence upon the health of the soldier exercised by his clothing, food, occupation, change of climate, etc.; in short, to take cognizance of the circumstances which tend to preserve the army in health and efficiency, as well as those which produce, or may be likely to produce, sickness and death.

In accordance with the new code of regulations, there is now sent to the Army Medical Department Office at Whitehall, at the commencement of every year, by each medical officer in charge of a detachment, regiment, or station, either at home or abroad, a detailed sanitary report, in which all the matters just mentioned

are commented upon, according to the extent in which they may have come under his observation. The Sanitary Report of Dr Logan is in reality an abstract of these; and notwithstanding certain peculiarities of its style, which we should be glad to see amended, it is impossible to glance through it without perceiving that the medical officers are generally both able and active in the discharge of their manifold and important duties. Professor Parkes, of the Army Medical School at Netley, has also contributed to this section an excellent "Report on the Progress of Hygiene;" and the "Report on the Ventilation of the New Hut Barracks at Gravesend," by Assistant-Surgeons Hewlett, Stanley, and Reed, for clearness, brevity, and scientific precision, may well be regarded as a model.

In the Medical section of Dr Mapleton there are a few contributions from medical officers to the literature, as well as to the science and art of medicine and surgery. The "Observations on the Influence of Pandemic Causes in the production of Fever," by Mr Lawson, Deputy-Inspector General of Hospitals, supply good reasons in behalf of the theory which supposes the existence of a noxious morbid atmospheric wave, whose course is from the south or south-east towards the north or north-west in the Indian and Atlantic Oceans. It is Mr Lawson's opinion that this pandemic wave "determines the frequency and severity, rather than the particular form of the fever, which, there are many reasons to conclude, is more intimately connected with the local circumstances at the time" of its outbreak.

The report on fever as it occurs in Malta, from the pen of Assistant-Surgeon D. Marston, R.A., may also be read with advantage. We are especially glad to see the paper of Dr David Milroy, Assistant-Surgeon, 30th Regiment, on "Pulmonary Diseases and their relation to Syphilis," followed by another on the same subject from Professor Aitken of the Army Medical School, because we fear that constitutional syphilis has never been sufficiently recognised in this country as a cause of phthisis. The profession will welcome the observations of these gentlemen, as being very valuable contributions to our knowledge both of syphilis and phthisis.

Professor Longmore's Reports on the Cases of Gunshot and Sabre Wounds of Invalids, sent to Fort Pitt during the year 1860-61, are excellent in every respect.

Dr Mapleton himself informs us, that "on the 1st of January 1861 there were 1033 medical officers on full-pay. During the year, 22 assistant-surgeons entered the service; 15 medical officers died; 9 resigned; 8 retired upon permanent half-pay (7 from ill-health, 1 from other causes), and 27 were placed upon temporary half-pay, on account of illness." He also gives a list of the medical officers, from the Director-General downwards. With reference to the number of deaths of medical officers, we must, however,

observe that in Hart's Army List 41 deaths were reported for this year, and in only 12 of these instances had the medical officers been on the half-pay list more than two years. We are therefore justified in believing the mortality of the officers of the medical department to be much higher than Dr Mapleton represents it,—indeed, not far short of 29 per 1000 (as was stated in this Journal last year), and consequently about 10 per 1000 more than that of the rank and file, and more than double that of the civil male population of England of similar age. When, therefore, we look down the long list of medical officers, and remember that two-thirds of them receive less than £210 a-year, we cannot wonder at their being discontented with their condition, especially as there seems no other prospect for the majority of them than to linger on for from ten to twenty years more, at very nearly the same rate of pay. This we believe to be the fundamental source of the dissatisfaction which pervades the department, and which serves to give exaggerated proportions to all its other grievances, whether emanating from without or from within. As to those which emanate from without, it is easy to understand why the medical has more of them than any of the other civil departments; for the officers of the latter are not brought so much into contact with the combatant officers, or in such important relations. The medical officer is in a false position in the army, owing to the absurdity of the regulations which affect him. He may be said to be a living anomaly, only to be described by antithesis; for “he is made to march, yet he was never drilled; he is supposed to ride, yet he was never taught; he carries a sword, yet he must not draw it;” he perhaps ranks as a captain or a major, yet he is neither one nor the other; he has grave responsibilities, yet no command; he pays his full share of the mess and band expenses, but has less than his share of their management; he is subject to military discipline, yet is considered a civilian; he has to dress like a soldier, yet he is not a soldier; he has to go into action, and occasionally also to fight, both for his own safety and for that of others, “yet he is perpetually told he is a non-combatant, etc., etc.; in fact, he is a civilian sailing, not under false, but under military colours.” It is clear that he is too much, yet not enough; and the only way out of the dilemma would seem to be that which would separate him as far as possible from the purely combatant ranks,—which would, in reality, make him a staff instead of a regimental officer as he now most frequently is.

Nor is it difficult to account for the grievances which have their origin within the department. There is probably no class of men who, from the very nature of their studies and pursuits, are so sensitive as the medical, or so prone to resent any dictatorial interference on points of professional practice; and hence it happens that in no profession is there a stricter code of etiquette, or more necessity for its exact observance. But, strange to say, in the

military medical service such a code has scarcely any place, for it seems to be often thought that relative army rank entitles the senior to dictate to the junior, even in matters appertaining solely to surgical or medical practice; and as the "regulations" can generally be interpreted so as to sanction such a proceeding, it would be contrary to human nature if the power were never exercised. But, as if this were not a sufficiently fertile source of heartburnings and distrust, it is said¹ that there has recently been instituted a system of "confidential reports," which, if carried out, must tend, we think, to make every medical officer a spy upon the private as well as upon the public conduct of his subordinate.

We need not go farther in search of the causes which have rendered the medical department of the army so unpopular. We can only re-echo the general belief that the remedy is very simple. As there are only two classes of medical officers really required in the army, viz., surgeons and inspectors, these ranks only should be retained, and the pay and relative rank of each should progress according to length of service. But will this remedy be applied, seeing that it involves an increase of expenditure? We hope so, because we know that every improvement in the medical department of the army, every advance made by its members in station and comfort, has hitherto been almost immediately followed by an amelioration of the health of the soldier, and by an increase of his longevity. The good effected by Lord Herbert and Miss Nightingale arose, we firmly believe, almost entirely from the extent to which their acts and efforts led to the loosening of the bonds of red tape by which the hands of the medical officers had previously been so closely tied, and not from the fanciful schemes which they inaugurated. Of late these bonds have been tightened again, notwithstanding that the sickness and mortality of our army are still so much greater than they ought to be. Well, therefore, may we ask whether it is wise already to neglect the lesson which was taught us by the sad and humiliating experience of the Crimean war?

On Malaria and Miasmata and their Influence in the Production of Typhus and Typhoid Fevers, Cholera, and the Exanthemata. By THOMAS HERBERT BARKER, M.D., F.R.S. Edin., etc., etc. London: John W. Davies: 1863.

THE subject of the production of disease by malarious and miasmatic influences has of late years received great attention, and on various important points a marked change of opinion has taken place. Typhus, for instance, which was formerly considered as derived from a specific poison, and as being incapable of being generated

¹ Army and Navy Gazette.

de novo, is now generally recognised as capable of being produced under deficient hygienic conditions, the most important probably being the crowding together of human beings. Typhoid or enteric fever, again, which is now regarded as a distinct disease from typhus, is probably capable of being generated by the emanations proceeding from decomposing fecal matter. As to the true exanthemata, small-pox, measles, and scarlatina, there is as yet no proof that they can arise spontaneously, and there is indeed a great probability to the contrary, as there is no evidence that these diseases existed in Europe at a remote period, and as they appear to have been unknown in the western world and in Australasia until introduced from the eastern hemisphere. The solution of the various questions regarding the influences of malaria and miasmata in the production of disease, is not merely of pathological interest, but of the highest practical importance, for a diminution in the mortality occasioned by the exanthematic and allied diseases is to be sought for, not so much in improvements in curative treatment, as in the discovery and enforcement of judicious prophylactic measures.

The first six chapters of Dr Barker's book contains an abstract of the opinions of a great variety of authors as to the influence of malaria, and as to the origin or development of epidemic diseases from geological, meteorological, and climatic influences. The seventh chapter contains Dr Barker's own opinions on the subject, and the following is the general conclusion at which he arrives:—"The thing is clear, as I shall have occasion to show in the sequel, that there are specific poisons for all the diseases under consideration, and that other agencies and influences, whether meteorological, geological, or mental, are but secondary agencies, adding to the effect of the primary and no more." With this conclusion, in the present state of our knowledge, we entirely concur.

The eighth chapter contains original observations on the relations of various meteorological states to particular diseases. The results are interesting; but as the period of observation (two years) was too short, and the number of cases of disease was too small to warrant the deduction of general conclusions, we refrain from stating Dr Barker's results in detail; we may merely state that they agree on the whole with those arrived at by other observers.

The tenth chapter is headed "Illustrations of the Origin and Propagation of Diseases by Infected Air." Regarding the cases detailed, Dr Barker observes:—"Suffice it to say, in the way of introduction to the examples of disease named, that they were all well marked types of the families to which they respectively belonged, and that the circumstances under which they occurred were observed in the most careful and trustworthy manner. However much, therefore, opinions respecting the origin or propagation of the diseases may differ, the *facts* must be accepted; and on the facts, apart from the opinions, I base all the value that attaches to the histories appended."

We are far from saying that there is not much interesting matter contained in these observations; at the same time, many are detailed in such a loose manner that their value as scientific facts is greatly impaired. In proof of this we shall quote the first two observations recorded by Dr Barker, as illustrative of the origin of typhus and typhoid fever:—

“Observation 1. A gentleman under my own care had often complained of the offensive smell in the lower part of his house on going down in the morning; and was compelled to open the windows and doors for some time, in order to remove it. This arose from a neighbouring drain, the emanations from which had frequently been so copious as to tarnish the candlesticks in the kitchen, and the brass handles of all the doors,—not only of his own house, but of the adjoining house. In August 1857, this gentleman was seized with fever, which he had so severely as to be confined to his bed for four weeks. During his illness a nephew from another part of the country visited the next door, but had no intercourse with his uncle. The nephew returned home and was directly afterwards seized with fever. After the gentleman's recovery, a shop-girl was also seized with fever, which went through precisely the same course. In this instance the water-supply was good, and removed from any source of contamination.

“Observation 2. In the immediate neighbourhood of a slaughter-yard in St Paul's Square, Bedford, the drainage is very deficient, fever has been rife for some years past. The exhalations are so powerful as to have been known frequently to have discoloured plated brass, and silver articles hanging up inside the houses. In one row of houses, in the autumn of 1849, a tradesman's wife and daughter, whom I attended, were attacked with fever, and the wife died. The members of another family in the adjoining house were all, except the husband, seized with fever in 1850. This fever was so virulent that it was with difficulty the affected family could procure a nurse to attend them. In another house, in the same row, several members of one family were seized, and two died. In 1853, several members of a fourth family were seized. On this occasion the fever continued in the house many months, and one person died from it. In 1853 and 1854, a large family in the same locality was attacked with fever. Two of the children suffered from it severely; one of them, a girl of twelve years of age, was confined to her bed for four months. They both recovered.”

To these observations, in which it will be noticed nothing is said of the symptoms of the disease, Dr Barker appends this remark: “The fever in all these cases was pure typhus, and many of the sufferers from it, after partial or complete recovery, were subjected to relapses.” In an inquiry of the nature of the present an author has no right to require his readers to accept his conclusions unsupported by evidence; what proof is there that the cases recorded were examples of “pure typhus”? and does not the frequent occurrence of relapses rather indicate that the disease was typhoid, in which relapses are not uncommon, although they are unknown in pure typhus?

The third observation is the following:—

“Dr Frederick J. Brown of Chatham has communicated to me the following case. ‘In the city of Rochester there was a house adjoining a privy-cesspool which had long been closed. One day this cesspool was opened; typhoid fever of a malignant type at once showed itself in the house, and three children

died from it. The connexion of cause and effect in this instance was immediate and unmistakable.'"

The connexion of cause and effect may to Dr Frederick Brown's mind have been immediate and unmistakable, but Dr Barker had no right to expect it should be equally so to his readers, and observations require to be much more carefully and minutely detailed before they can be accepted as scientific evidence.

In many of the other observations the description of the fever is equally vague; thus, it is spoken of as "low"; "low continued"; "of an obstinately relapsing character"; "of a typhoid character"; "typhus and typhoid fever with diarrhoea." We regret that more precision has not been introduced into these descriptions, for it is only by means of a collection of carefully-recorded observations that the question of the origin of the various forms of fever can be determined.

The twelfth chapter contains a record of original experiments regarding the poisonous effects of gases emanating from sewers and cesspools. By means of an ingeniously-constructed apparatus, Dr Barker was able to expose the animal under experiment to the influence of a continuous current of cesspool-air for any length of time. One of the experiments is very interesting, though incomplete. It is too long to be detailed here; but it may suffice to say, that a dog was exposed to a current of cesspool air for twelve days, and the symptoms produced were certainly not unlike those of typhoid fever; the animal was at first restless and uneasy and refused food; on the second day, there was frequent sickness followed by diarrhoea; thirst and loss of appetite continued, and emaciation made rapid progress; on the ninth day, when removed from the box for a short time, his skin was found hot and dry, and he was very weak; on the twelfth day, being very ill and restless, he was removed from the box, and the experiment was brought to a conclusion. As it stands, this experiment teaches us little or nothing; but had the animal been allowed to die, or had it been killed on the twelfth day and a post-mortem examination been made, its previous sufferings would have been utilized, as it would have been very important to know whether ulceration of the intestines would have been found. Experiments with sulphuretted hydrogen, sulphide of ammonium, and carbonic acid gas, are then detailed, and the result arrived at is expressed in the following terms:—

"The symptoms which we have thus noticed as resulting from the inhalation of sulphuretted hydrogen, sulphide of ammonium, and carbonic acid, are sufficient to account for the effects arising from cesspool emanations, without seeking for any further product from such emanations. Comparing the experiments with cesspool air, with those in which separate gases were employed, the inference seems clear to my mind, that the symptoms arising from the inhalation of the cesspool atmosphere were due mainly to the presence of a small amount of sulphuretted hydrogen, which gas with ammonia was always present. If the experiments with the cesspool air be placed side by side with those in which sulphuretted hydrogen, in the proportion of 0.51 per cent. was administered by inhalation, the analogy between the two sets of results will be sufficiently unmistakable.

With this conclusion we cannot altogether concur; among other reasons, because sulphuretted hydrogen, when present in sufficient quantity to be injurious, can always be recognised by its odour; whereas there seems every reason to believe that cesspool emanations may cause disease though no peculiar smell can be detected.

The fourteenth chapter treats shortly of public and private hygiene in its relation to the diseases under consideration.

In conclusion, though we have pointed out what we consider to be serious deficiencies in Dr Barker's work, we consider that he is entitled to the thanks of the profession for the care and ingenuity he has devoted to a very important and complicated inquiry.

A System of Instruction in Qualitative Chemical Analysis. By Dr C. REMIGIUS FRESENIUS. Edited by J. LLOYD BULLOCK, F.C.S. Sixth Edition. London: Churchill: 1864.

THE works of Fresenius have long since been recognised as amongst the best guides to the student of analytical chemistry. Their success both on the Continent and in this country are sufficient proofs of the estimation in which they are held. The present edition of the work on qualitative analysis contains several important improvements. In the first place, whereas the plan of the work originally excluded the rarer substances and their compounds, all the known elements are well treated of, and processes are given for their preparation and detection; and in the second place, the beautiful process of spectrum analysis is fully treated of. This part of the work is illustrated by an admirably-executed plate of the spectra produced by the alkalies and the alkaline earths. With these important additions, combined with the known accuracy of the older portions of the work, we cannot doubt that the popularity of Fresenius' Qualitative Analysis will be both maintained and extended.

Part Third.

MEDICAL NEWS.

CONVERSAZIONE OF THE ROYAL COLLEGE OF SURGEONS.

On Thursday the 17th of December, a *Conversazione* of the Royal College of Surgeons was held in their hall, Nicolson Street. The company, which was very numerous, and consisted exclusively of members of the medical profession, included, besides Fellows of the College of Physicians and Surgeons, most of

the medical practitioners in Edinburgh and the neighbourhood, and representatives of the public services.

Mr Benjamin Bell, the President of the College, received the visitors in the Museum, which was brilliantly illuminated; after which they adjourned to the hall, where Professor Syme read a paper on Medical Education, which will be found at page 581 of this number of the Journal. At the conclusion of his address, Professor Syme stated, that, by the permission of the President, any of the gentlemen present were at liberty to express their opinions on the subject which he had brought under their notice.

Professor Christison, at the invitation of Mr Syme, and by the permission of the President, would say a few words on the subject of medical education and examinations. It would be easily understood that his attention had been long directed to the subject, in fact at the very time he became a member of the Senatus he found that body busily engaged with medical reform, so far as education was concerned, and the discussion was carried on for the greater part of the winter. Dr Christison had at that time, and since, taken great interest in the question, and again, after a long interval, he had been called on to take part in the discussion of the same subject at the meetings of the Medical Council. Many alterations had been made by the Senatus at the time to which he referred, and many more had been made since, but the result of the whole had been what Mr Syme had described, namely, a distrust throughout the profession generally of the correctness of the present system of medical education. Though there might be difference of opinion as to details, there could be none as to the fact that a feeling existed that something was wrong as to the whole system. Whether the error was in the system itself, or in the minds of those who believed it to be imperfect, remained to be discovered. Mr Syme, in Dr Christison's opinion, had touched the great difficulty; it was at all times easy to say that medical education required reform, but the question was, why it did so? Mr Syme was thoroughly right in saying that every subject, even the practical subjects, had become so extended, that it was impossible for the student to master them all. The practice of Surgery had assumed vast dimensions; and as to Medicine, within the last forty years it had at least quadrupled. When we turned to the other more or less fundamental pursuits, the prospect of what lay before the student was really almost appalling. Dr Christison was glad that Mr Syme had not excepted anatomy, for essential as a knowledge of it was, it was impossible that a student could acquire a knowledge of the whole of it. Here, then, a difficulty arose, and the first question was, how much of the different subjects was a student to be expected to know? It was impossible to tell the teachers what they were to teach, until they told them how much was to be required by the examiners. The matter was one which required grave consideration; but for himself, he thought he could see in regard to some of those subjects with which he was specially familiar, that considerable restrictions might be made; while as to others of which he had not the necessary knowledge, he would not presume to offer an opinion. Still, he believed, that if those who were accustomed to teach would lay their heads together in a fair and impartial spirit, Mr Syme's conclusion would be fully borne out. The subject however was so wide, and required such careful consideration, that Dr Christison could only express a general opinion without entering into details. On the subject of examinations, however, he could speak still more strongly and decidedly. He had long been in favour of the plan which Mr Syme had now suggested. Examinations, as at present conducted, extended a great deal too far; and this opinion would be perhaps the more readily coincided in, when he stated that he had himself been at one time persuaded that an extension was desirable. He was now, however, satisfied that examinations might be too much increased. Dr Christison thought that when examinations were less extensive than now, the quality of the graduates and practitioners was as good as at present, some might think better. Not that the teaching was worse, or the students less diligent than formerly, but that constant examinations were undoubtedly injurious to that

calm reflection which students required. Dr Christison had always thought that examinations were much too highly estimated as a means of classifying the attainments of students, and an experience of thirty-one years had convinced him that an examination was a very feeble test of the probable abilities of a student as a practitioner. In illustration of this, he might mention two extreme cases. One gentleman whom he had known as a most diligent student appeared for examination and was rejected. Next year he again came up, and passed with extreme difficulty; in fact some might have thought that his success was in great part owing to the humanity of his examiners. He entered one of the public services, where he soon won golden opinions from his superiors, and became highly respected, as an able, zealous, and clever practitioner. The other case was that of a gentleman who had been twice rejected at his examination; he appeared a third time, and by dint of the intense efforts of a powerful memory, passed a brilliant examination, to which Dr Christison could testify, as he had been one of the examiners; at the same time, the examiners knew perfectly well that the young man was a mere fool. Luckily for this graduate he entered one of the public services, where his incompetency was speedily detected, and he was soon obliged to retire. No doubt these two were extreme cases, but between them were many which approached more or less nearly to one or other. In fact, examinations were no proper test of what a student knew. Dr Christison however was, and had long been, strongly in favour of class examinations; the student never knew when he was to be called upon; the teacher and student got well acquainted with one another, and the teacher was able to obtain a far better insight into the real knowledge of his students than could be gained by any pass examination. Supposing these examinations had been satisfactorily gone through in all the fundamental subjects, Dr Christison would exempt the student from all farther examinations in them, and would leave him to devote his uninterrupted attention to the practical subjects. With regard, however, to the practical subjects, such as Medicine and Surgery, Dr Christison thought there could not be too much examination, provided the examiners proceeded discreetly. A practitioner was required to have a knowledge of all the details of these subjects; and before a student obtained his qualification, he was bound to show that he had a sufficient familiarity with them. But he repeated that it was a great hardship that the student should be required to keep up till his pass examination a knowledge of all the details of the non-practical branches. Another hardship to which the student was exposed, was the necessity for passing double examinations. It was surely unnecessary, that a man who had already obtained a qualification, should be required to pass another examination before he could gain admission into the public services.

Professor Lyon Playfair, at the request of Professor Syme and of the President of the College, would make a few observations; he did so, however, with considerable diffidence, as the only non-medical man amongst this large professional assembly, and because he had not had the benefit of a very long experience as a medical examiner. Dr Playfair would not address himself to the general question of medical education, but to the subject of class examinations. The mode in which he himself conducted them was this,—once a-month questions were given out in the class of a very minute character, and extending over a wide field; those who took part in the examination were allowed four hours to reply to the questions in writing. The value attached to each set of questions was a hundred, and it was easy, by adding up the marks obtained during the year, and dividing by the number of the examinations, to determine the exact per-centage of each student. The first class of honours included those students who obtained seventy-five per cent. of the full value; the second those who obtained above fifty per cent. Now, if it was considered that any student who entered the first class could only have done so by passing through a very rigid and long examination, it certainly seemed absurd to require him to appear again two years afterwards, for twenty minutes or a quarter of an hour, when, though still familiar with the principles of chemistry, he must necessarily have

forgotten many of the details. Students who went successfully through the class examinations should be freed from the pass examination, and if they were, the effect would be admirable; the students would work more while attending the class; they would dismiss from their mind many mere details, and would derive good from chemistry as an educational subject for training the mind; while they would be left free to devote their attention to other more professional subjects. Dr Playfair saw only one difficulty in this plan, and it was, that the examinations must be conducted within the walls, or at least in connexion with the examining body. The College of Surgeons, for instance, had no control over his (Dr Playfair's) examinations; they did not see his questions, and could not tell whether they were of a suitable character; they were not likely therefore to accept the result of his examinations. But there was no possible difficulty in the case of the University. Dr Playfair was under the orders of the Senatus; they could see his questions, they could appoint an assessor, and ascertain how the examinations were conducted; and under these circumstances it was quite absurd to make those who had gained honours in this class examination appear again. Dr Playfair had seen this evening a gentleman who, at these examinations, had taken ninety-eight per cent. of the full value, and was it not preposterous to examine him orally for a few minutes two years afterwards. Dr Playfair was, therefore, of opinion that class examinations should qualify for passing; if they did, a great impetus would be given to education, and the system of grinding up would be prevented.

Professor Balfour's was, unfortunately, one of those subjects which had been rather severely handled by Professor Syme. He had now taught botany for twenty-three years, but he remembered well that when a surgical pupil of Mr Syme's, he had received from him many a lesson in botany, when going round the garden at Minto House. And he had never regretted this; for while it did not prevent him from learning much good surgery, it had tended to inspire him with a taste for botany. There was no doubt, however, that teachers were apt to enter too minutely into their subjects, and to make their courses contain too much. But for his own part, Dr Balfour could say that of late years his course had been diminishing in extent, for he felt every year a greater necessity for limiting his range of subjects. It must, however, be kept in mind that botany was one of the *training* classes. Classes were divisible into the training and the practical. Under the former head might be included classical study, and the natural sciences, such as botany and natural history; the study of these subjects exercised a very important training influence on the mind. They should, however, be put in their proper place; they should be studied first, and not mixed up with surgery and medicine. The student should be done with them early, and then he might dismiss them if he chose. It should always be borne in mind that the degree of Doctor of Medicine was not a mere license to practise; it was in addition an honour, and the holders of it were expected to be better taught than those who merely possessed a license, and in particular they were expected to have some knowledge of the sciences. If we looked to the men the University of Edinburgh sent out, we would see what important scientific positions they occupied; and if we cut off botany and natural history, we should lower much the position of our medical graduates. The only hardship as to the present system, was that these subjects were not taken sufficiently early. With regard to class examinations, Dr Balfour had, like Dr Playfair, long since adopted them; they involved no little labour on the part of the professor, but he thought that when he had fairly determined a man's position in the class, he had done him a great favour. As to those who distinguished themselves in these examinations, Dr Balfour thought it was ridiculous to examine them again for a pass. At the same time he would not wish to trust to the teachers entirely; otherwise the students would be at the mercy of a single man, and he thought it important that some other person should have a voice in the matter. Besides, the system was inapplicable in the case of those candidates who came from other schools; and moreover, many would not take a part in class examinations, and what was to be done with them? The subject

indeed was not so simple as Professor Syme had represented it to be. In conclusion, Dr Balfour would remark, that though there were many good thoughts in Mr Syme's paper, the portion of it which treated of the remedies of existing evils was of rather a vague character; at the same time, much good would no doubt come out of it.

Dr Andrew Wood observed that it might perhaps be considered presumptuous in one not a teacher expressing an opinion regarding the proper arrangements for medical education and examination, but it seemed to him that the question should not be left to teachers alone, and that it was right that practical men should have something to say on the subject. Dr Wood considered that the medical profession was much indebted to Professor Syme for having brought the subject so prominently forward; although at the same time he could not say that he himself agreed with all, perhaps not with the half, of the opinions expressed. As to the fact of the student being overloaded with classes, he entirely agreed with Mr Syme. Not only were there too many courses of lectures, but many of the courses were a great deal too long. Dr Wood well remembered the first course of surgery he attended, when the teacher appeared daily and read a long and elaborate dissertation; and this was called a course of lectures on surgery! Dr Wood afterwards went to Dublin, and attended the course of Dr Colles, which was of a very different character. The lectures were only delivered three days a-week, and Dr Colles entered with only a small piece of paper of the size of a card in his hand. This he laid on the table before him, and at once entered upon the discussion of some practical point; his discourse not being a mere compilation from the works of others, but founded upon and illustrated by his own observation and experience. From this course Dr Wood had derived far more benefit than from the other. Professors and lecturers seemed often to forget that there were many things which the student could learn as well, or better, from books at home, than from the lips of the lecturer. Many courses of six months might be reduced to three; and even then it might be sufficient if some of the classes met only three times a-week. Were this done, there would be abundance of time for practical anatomy and hospital attendance. As to examinations, much might be done. A full preliminary examination in Arts had now been established, and the door of the profession was henceforth closed against illiterate men. Dr Wood quite agreed with Mr Syme that this examination should in all cases be passed before the student commenced his professional education. An age had already been fixed, before which the diplomas of the different licensing bodies could not be granted, and there was no reason why an age should not be fixed before which, (say seventeen), professional studies could not be entered upon. Some of the branches in the curriculum should, in Dr Wood's opinion, be brought in much earlier than at present. Thus, the student should be disembarassed of botany and natural history at the end of his first year; his mind would then be left free for the more practical subjects. Class examinations were most important; and instead of it being merely permissive for the teacher to have them, Dr Wood thought they should be imperative. Were these regularly instituted, and conducted in a *bonâ fide* manner, Dr Wood would then be inclined to relax somewhat the severity of the final examination. Dr Wood would not, however, do away with pass examinations; and instead of the examining board being composed exclusively of teachers, Dr Wood would always have upon it some neutral persons, so that fair play should be guaranteed to the student, and the public should be protected against admission into the profession of incompetent persons. Dr Wood believed that there was at present a tendency to the institution of sessional examinations, as at Paris, where a student was obliged at the end of the session to pass an examination on the subjects he had been studying, and where he was not allowed to enter upon new branches until he had passed this satisfactorily. If this system were adopted here, there would be a guarantee that the student was carrying on his studies in a regular and satisfactory manner. One of the great hardships of the present system was the great number

of examinations students had to pass before different bodies. There was no reason why different bodies should not join together, so that by a common examination several qualifications might be obtained. The liberty granted by the Medical Council to do this had already been taken advantage of to a very limited extent; but if the system were fully carried out, the student would be relieved from a great hardship.

Dr Sanders would make a very few observations, as he had already brought the subject of medical education before the College of Physicians, and as a committee had been appointed by that body to consider and report on the whole subject. Medical students, in *Dr Sanders'* opinion, were much indebted to Professor Syme, for thus endeavouring to free them from a portion of the load under which they laboured. No ordinary courage was required to stand forward and protest against existing institutions; and but for Professor Syme, students might have gone on for years without much prospect of relief. The only suggestion *Dr Sanders* had to make was one which he had already brought before the College of Physicians, and it was that each licensing body should be required to publish a detailed programme of the subjects for its examinations both for pass and for honours. In this way students would know exactly what was to be required of them, and would not require to waste their time upon irrelevant matter. This was already done in the case of the preliminary examination. In classics, for instance, certain authors, or certain portions of their works, only were required; and so it was in geometry and algebra, and the other subjects. The same system might with advantage be carried into the medical examinations; indeed, he noticed that it had already been introduced in the case of chemistry, botany, and natural history, certain portions only being required from the student in each year. The system might, however, be extended much more widely than at present. No doubt there might be some difficulty in arranging the details; but if the teachers would meet, they might agree to a programme to be laid before the Medical Council for its approval.

Professor Bennett had been on the whole much pleased with Mr Syme's address. The great improvement which was taking place in medical education was that it was becoming more practical. Hitherto the mind of the student had been overburdened and his memory overtasked. The remedy for this was to appeal less to his memory, and to lay before him obvious facts, which would make an impression upon him, and would not be readily forgotten. By multiplying apparatus, and performing numerous experiments, the subject was laid before the student in a far more striking and effective manner than by mere lecturing. If pains were taken to illustrate lectures, the teacher, instead of saying Professor So-and-So says this or that, would proceed at once to the performance of the experiment. Such teaching was only possible in large schools, with large funds at their disposal, where everything which was talked of could be shown. As to examinations, *Dr Bennett* in conducting them would not merely appeal to the memory, but he would make them practical. Instead of asking the candidate to describe the symptoms of a disease, he would take him to the bedside and put actual disease before him. Mr Syme had indeed said that there was something inhuman in making patients available for such an examination, but in this *Dr Bennett* differed from him entirely. Mr Syme's idea probably was, that a student of surgery of no experience would do a patient with fracture harm, if he proceeded to examine him. But then a surgeon would be present, who would not allow mischief to be done, and who would know at once, from the mode in which the student set about his examination, whether he was acquainted with the nature of fracture. In examining on medicine, the present system was to ask the student the symptoms of a disease, which possibly he had never seen. It would be much better to say to the student, "What have you seen?" and, on his replying, to examine him on those subjects with which he professed familiarity. On the Continent, *Dr Bennett* had frequently seen students at their examinations, part of which was conducted in the wards of the hospital, and he had never known

any harm result to the patients. No doubt it would be highly dangerous to allow a student to hammer the chest of a patient with acute pneumonia; but what professor would take such a case for such a purpose? It was quite easy, by a variety of means, to discover the real knowledge of a student; a practical man might find it out by the very manner in which the candidate examined the pulse and the tongue. Dr Bennett had taught clinical medicine for fourteen or fifteen years, and the real teaching was carried on at the bedside. The men were called up and required to put their ear to the patient's chest, and were then asked, "What do you hear?" Therefore, though with great deference to Mr Syme, Dr Bennett must continue to recommend the practical method both of teaching and examining.

Dr Burt, (*President of the Royal College of Physicians*), considered it a high privilege to be called upon to move the thanks of this large meeting to the distinguished Professor whose address had called them together this evening. Anything coming from that gentleman was sure to merit and to receive the respectful attention of his professional brethren; but on the subject of medical education and examination, Professor Syme was peculiarly qualified to speak. (The vote of thanks was carried by acclamation.)

The President had listened with deep interest to the paper of Professor Syme, and to the discussion to which it had given rise, and had no doubt that beneficial results would follow. It did certainly seem absurd, that gentlemen who had obtained a degree or a diploma, should be called upon to pass another examination before being admitted to the public services. So far was the system carried, that he believed it was almost essential that candidates for admission to the army should undergo a course of special preparation in London before going in for examination.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XLIII.—MEETING I.

18th November 1863.—JAMES SPENCE, Esq., *President*, in the Chair.

I. FIBROUS TUMOUR OF THE UTERUS WHICH CAUSED FATAL HÆMORRHAGE.

Dr Matthews Duncan exhibited a fibrous uterine tumour, globular, about 3 inches in diameter, occupying the fundus uteri, and as if pressing into the enlarged uterine cavity. The uterus lay high in the pelvis, or rather elevated into the abdomen, and the cervix uteri was slightly hypertrophied, and considerably elongated. The hypertrophy of the proper tissue of the uterus around the tumour was great, and the uterine sinuses were enormous, as in pregnancy.

Dr M. D. was called to see the patient on the day of her death. She was intensely anæmic in appearance, but fat and puffy. She was suffering from dyspnoea, and evidently dying, but her pulse was firm, and respiration was clear over the whole chest. She died in a few hours. She had suffered long from excessive monthly hæmorrhages.

The only point to which Dr M. D. wished at present to attract special attention was a very interesting observation made by himself and Dr Grainger Stewart in examining the uterus. The tumour, as it projected into the uterine cavity, was covered by a layer of muscular or uterine tissue, and a healthy layer of mucous membrane. But about the centre of the projection a little clot was observed, decolorized at its extremity (no hæmorrhage had taken place for some days before death). This clot projected through a round opening as large as the transverse section of a large crowquill. This opening communicated with the elephantine reticulations of various sinuses in the hypertrophied uterine tissue surrounding the tumour proper.

Much discussion, it was well known, had taken place regarding the source of hæmorrhage in menorrhagia of all kinds. The dissection of this case exhibited a most satisfactory solution of the question in this particular instance. At present Dr D. would only say that he believed many, if not most cases of violent

menorrhagia would, on minute investigation, be found to result from a similar condition of uterine sinuses or of the same vessels in the uterine mucous membrane.

II. REPORT OF SOME CASES OF AMPUTATION, ETC., IN WHICH ACUPRESSURE WAS EMPLOYED.

Professor Simpson read the report in question (by Dr Archibald Hamilton, Carlisle), which will be found at page 630 of the present number of the *Journal*; and in doing so, stated that wounds and operations in which no ligatures were used, as vesico-vaginal fistulae, ruptured perineum, etc., healed, as a general law, by the first intention, while wounds in operations in which ligatures were employed seldom or never did so throughout. Ligatures prevented the chances of complete adhesion by the first intention, partly by acting as foreign bodies between the lips of wounds; for, after a day or two, they had a seton-like irritating action, from the decomposition of the dead animal fluids imbibed into them. But they further exercised an adverse and deleterious influence against primary adhesion in another and a more marked mode. The end of every artery that was ligatured, or, at all events, the part included within the noose of the thread, was speedily changed into a small dead slough; and in consequence of this, every surgical wound in which ligatures were used became the seat of as many little dead decomposing sloughs as there were arteries tied. For, to use the words of John Bell, "the part of the artery below the ligature is destroyed like a polypus, fades and dies; and it is the fading of the part thus mortified that allows the noose of the ligature to slip off." All surgical writers who have studied the effects of ligatures upon the ends of arteries agree in corroborating the fact that the application of a strangulating thread to the end of a projecting arterial tube of necessity leads to the gangrene, mortification, or sloughing of the strangulated part. The strangulated portion of artery, to use another comparison of John Bell's, is like a strangulated portion of intestine in hernia, it mortifies and sloughs off. Indeed, "every surgeon knows (to cite the words of one of the distinguished surgeons of our own day, Mr Spencer Wells) that the part of the artery beyond the ligature *must* be killed by it." "The portion of artery embraced by the ligature mortifies (observes Professor Gross of Philadelphia), and comes away in the form of a slough." Further, each strangulated and sloughing point comes to be separated from the living tissue by a process of ulceration, and consequently of local molecular disintegration and suppuration being set up at the ligatured point. Now, if any man were to suggest or propose to any surgeon who was anxious to heal his wounds by the first intention—and what surgeon is not—that he should place between the lips or sides of his wound several small masses of mortifying sloughs,—that he should fix and anchor down in the very depths of his wounds two, three, four, or more points of dead, decomposing animal tissue, would not every philosophic surgeon think this recommendation most preposterous and most strangely ridiculous? And yet this is truly and exactly what the surgeon follows out in actual practice when he strangulates the ends of two, three, four, or more bleeding arteries with silken or other ligatures. Nay, when a method is shown by which, as in acupressure, the bleeding of arteries can be easily arrested without at all producing these putrefying sloughs in wounds, and without leaving there for many days an irritating foreign body, such as a silken ligature, some surgeons not only altogether reject the proposal, but only seem the more ardently determined to adhere to the continuance of the olden practice of strangulating and sloughing the ends of arteries. At first it was maintained that acupressure would not prove sufficient for the purpose of arresting the hæmorrhage in large wounds and from large vessels. The cases described by Dr Hamilton, and now a pretty long list of amputations by various surgeons in various parts of the world, must surely be allowed to have put the question of the efficiency of the method at rest. Some of those operators who have tried acupressure have stated that

they have found it easier of application as a general rule than the ligature. When practised more extensively, as Dr S. had no doubt it would be, the modes of performing it would probably be rendered more simple than the three methods in which it was practised now. Already we know that a simple short sewing needle and wire thread is generally the only implement required for the purpose. But to effect general primary adhesion in such a wound or a stump, other conditions must perhaps be still far more sedulously followed and enforced than they are now. The wound, before its final closure, must of necessity be entirely freed of all foreign matters, such as the dead dust from the sawn bone, particles thrown off from the sponge and torn charpie, air enclosed deep down in the wound, coagula of blood, etc. Hitherto many such minor details have not been duly exacted and pursued, probably because there was a want of faith that a wound like that made in amputation could be often made to heal by first intention; but due experience, and due care and caution, will probably betimes prove that even the largest surgical wounds may be made to heal by primary adhesion in a far greater number of instances than is credited in the present state of the art. After describing the three different modes which he had proposed of using the needle in acupressure, Professor Simpson went on to allude to the objections that had been brought forward against the practice. In the "Lancet" for 1860, page 445, "three grounds" of objection to acupressure are reported as adduced by a distinguished surgeon and teacher of surgery. The first of these objections is, that "ligature did not deserve the charges that had been brought against it" in the way of producing gangrene in the end of the strangulated vessel, etc. In answer to this, Professor Simpson appealed to every surgeon who had duly studied the pathology of the ligature of arteries. "The ligature," says Mr Syme, "at once deprives the part embraced within its noose of vitality;" and every student in surgery knows that a devitalized part is thrown off from the living body by a disjunctive process of ulceration, involving the formation of pus. "In wounds of the lips and cheeks [and consequently in other wounds], in which union by the first intention is very desirable," ligatures (as Mr Syme very properly observes in his *Principles of Surgery*) are objectionable, because "the coronary arteries and other branches of the facial cannot be tied without leaving threads apt to disturb the adhesive process." The second alleged ground of objection to acupressure is, that if the ligature is discarded, "its place might be supplied by torsion much better than by the needle process." But every surgeon knew well, that when torsion was applied to a degree to be effectual in closing large arteries, it generally, like the ligature, led, as was pointed out long ago by Dupuytren, Chelius, and others, to a greater or less amount of sloughing and suppuration, from the amount of laceration and physical injury which you produced in the arterial tube. On this score it was as objectionable as the ligature, and less safe and certain. The third ground of objection urged against acupressure was that "the field for using the needle process would be found of the most limited extent, since it could only be adopted in cases where the vessels lay in the integuments or textures adhering to them." The numerous amputations and other operations in which acupressure had now been successfully employed was a sufficient answer to an objection which showed that the gentleman urging it simply misunderstood the whole process. In the whole common course of surgical operations, acupressure had already proved as efficient as the ligature. If there were any cases or wounds in which the ligature could be employed, and not acupressure, there were cases and wounds where already acupressure has succeeded after the ligature has failed. The first case reported in Dr Hamilton's paper was a most striking instance of this fact. The man in all probability owed his life to acupressure. He had heard of a case of amputation below the knee, where, after fruitless attempts were made to secure the retracted anterior tibial artery for the ligature, acupressure was tried, and at once arrested the hæmorrhage. In a case of ovariectomy, Dr S. had seen Mr Spencer Wells completely close a vessel in the abdo-

minal walls bleeding into the peritoneum by acupressure, after one or two attempts to close it by the ligature had proved unsuccessful. In the last case of amputation of the thigh at which Dr S. had been present, the surgeon—a very accomplished operator—closed all the vessels by acupressure except one large arterial branch, which, lying deep up in the angle of the stump, was bleeding into the end of a sinus there. Deeming this artery one necessitating the use of the ligature, the surgeon tried to secure it, but failed, after two or three efforts. When he proposed to dissect down upon it, Dr S. suggested that perhaps acupressure might succeed here as well as in the other vessels. The first needle employed arrested all further hæmorrhage. Besides the objections noted to acupressure, the objector reported in the *Lancet* states that he had long looked upon ligatures “as useful, by maintaining a connexion between the bottom and surface of wounds, so as to prevent that accumulation of blood in the cavity which is apt to happen, and substitute an abscess for primary union.” Surely if the ligature allowed of this oozing of blood into the depths of stumps and wounds, it was then confessedly a very imperfect hæmostatic; or if these alleged accumulations of blood be the consequence of closing the wounds before all oozing had ceased, then certainly this hasty closure of them was a point of practice that ought to be corrected, as it was perfectly well known that they could be left open for hours without affecting the chances of complete primary union. Perhaps the time may come yet, when in some forms of wounds, where the bleeding orifices of vessels require the use of needles, these needles may be withdrawn in a few hours, and then the wound closed without leaving between its lips any foreign body whatever. The femoral artery had been found closed by acupressure by Dr Handyside within fifty hours, so that all needles on minor vessels may, we infer, be generally withdrawn before that time; but how much sooner, can only be revealed by accumulated experience. No doubt, the sooner we can remove the needle and every form of foreign body from a wound, the greater is the chance of primary and speedy union. We can remove the needles in acupressure at will and at once, whenever we think fit. It is very different with the ligature; for it, as a foreign body, cannot be removed till it has ulcerated through the strangulated artery, a process which almost always involves several days, and sometimes weeks; and during all these days and weeks it acts more in relation to the surrounding parts as a thread-seton than aught else. At the best, it was an irritating foreign body present in the living tissues, and lying in a wound, any excessive irritation of the lips of which was always liable to interfere with the process of healing. A most distinguished metropolitan surgeon lately publicly urged that the retained and anchored ligature-threads were useful in making tracks which acted as vents for the discharge of pus from the interior of wounds and stumps. Surely modern surgery should aim at far more than this, namely, to reach to some form of practice which would prevent the use of any such vents, by altogether preventing suppuration in the interior of the wound. The same gentleman had argued also that the ligatures were of advantage in preventing the patient using his limbs too soon; for “suppose,” he argued “the stump did heal by the first intention, it could not be used for weeks,—for months,—as it was in a great measure new material, which would not bear pressure.” Assuredly it was scarcely necessary to answer such an argument,—the argument of taking care not to cure our patients too soon. Professor Simpson concluded his observations by stating, as follows, the probable advantages and disadvantages of the ligature and acupressure :—

1. The end of the artery must be isolated from its connexions before the ligature is applied. No such separation or isolation is required when acupressure is employed.

2. The ligature requires to be drawn so tight as to lacerate the two internal coats of the artery. An acupressure needle places the sides of the arterial tube in contact, and does not lacerate in any way the tissues of the tube.

3. The ligature strangulates the external coat. The needle does not inflict any injury or lesion whatsoever on that or the other coats.

4. The ligature necessarily leads on to ulceration, and consequently suppuration at the constricted part of the artery; whereas acupressure produces the lowest type of inflammation only,—viz., the adhesive.

5. Each ligature produces mortification of the end of the vessel, or at least, of the part of the tube included in its noose, and consequently places as many pieces of dead animal matter or sloughs in the wound as there are vessels tied. No mortification or death of the arterial tube results from the use of the needle.

6. Organic ligatures imbibe dead animal matter, which quickly putrefies and leads to irritation of the surrounding tissues. Metallic needles or threads are incapable of imbibing animal fluids, and hence have not the same tendency to produce irritation by their presence.

7. The ligature is not removable except by the process of disjunctive ulceration, and requires a period of from five to twenty days or longer for its separation. The needle is removable in an hour or two, or a day or two at will.

8. During all the time of its detention, the ligature in its tract opposes, as a foreign body, adhesion by the first intention. The needle is soon withdrawn, and is, therefore, less inimical to primary union.

9. Acupressure diminishes the risk of surgical fever, because with it there is less chance of septic matter forming in the wound than with the ligature, producing, as ligatures do, multiple points of ulceration, suppuration, and gangrene or sloughing in each wound.

10. A ligature stops the artery only. Acupressure stops the vein also, and thus lessens still further the chance of blood oozing, and of pus or other morbid matter reaching the circulation.

11. Two persons are usually required for the application of a ligature. One suffices for acupressure.

12. Acupressure has been found to succeed where secondary hæmorrhage had repeatedly occurred after the ligature. (See Case I.)

13. Acupressure has been found an easy and effectual means of arresting hæmorrhage, where the surgeon would have required to cut down upon the vessel with the knife before he could apply a ligature. (See Case III.)

14. For these various reasons, there is less risk to life after acupressure than after ligature; and the cure will prove in all probability more rapid when acupressure has been employed, than after the use of ligatures.

Mr Spence had, on former occasions, fully expressed his opinion regarding the comparative merits of the ligature and of acupressure, and he did not propose to go over the ground again. He might, however, state that he had met with nothing to alter the favourable opinion he entertained of the ligature. If the ligature failed, then indeed he might be led to try the needles. *Mr Spence* did not think *Dr Hamilton's* results with acupressure very favourable; out of eleven cases there had been one of secondary hæmorrhage. When *Mr Spence* brought the subject of amputation before the Society last year, he had had two hundred and five of the greater amputations with only two cases of secondary hæmorrhage. Since that time he had had another case of secondary hæmorrhage, but it was not due to the ligature, but to sloughing having extended up the vessel, which gave way three-quarters of an inch above the ligature. Professor *Simpson* insisted much upon the alleged fact, that after the use of the ligature a portion of dead tissue was left in the wound; but *Mr Spence* was not so much guided by presumptions on this point as by what he had seen. He had performed numerous experiments to determine the effect of the ligature, but he had never yet seen in the loop any portion of dead matter. No doubt there must be a little, but not enough to produce inflammation, or even irritation of the stump. It must be remembered also, that there was a great difference between a stump and a vesico-vaginal fistula. In the case of the latter, the parts were all highly vascular and vitalized, and there was more than one surface from which the discharges might pass off; in a stump we had to do with tissues of very different

characters, skin, muscle, tendon, bone. This difference of textures in the stump was the principal cause of the suppuration; the end of the bone had to be rounded off, in this process portions died; and it often happened that long after the ligatures had come away, discharge was kept up by the presence of little bits of dead bone. Mr Spence would only say in conclusion, that if a substitute were to be proposed for the ligature, it should be something decidedly better than it; he could see nothing in the cases recorded which showed that the needles had any superiority over ligatures: the needles had no doubt answered well, but not better than ligatures would have done, and it must be remembered that there had been one case of secondary hæmorrhage.

Professor Simpson said that, in the case of secondary hæmorrhage alluded to, the needle had, perhaps, been removed too soon, having only been left to compress the femoral artery for twenty-four hours. Dr Hamilton had informed him, in conversation, when speaking of this case, that he attributed the secondary hæmorrhage principally to the great restlessness of the little patient. But in the Carlisle Hospital, as Dr Hamilton's table of amputations shows, secondary hæmorrhage had occurred three times more frequently with the ligature than with acupressure. In a vesico-vaginal fistula or ruptured perineum, there are as many individual tissues divided as in an amputation wound, with the exception of the bone. As to what Mr Spence had said regarding the end of the bone requiring to be rounded off, with dead portions coming away, he was sure he had heard surgeons say that their stumps sometimes healed by the first intention except at the points where the ligatures came out. Therefore, in some cases, the bone did not offer that obstacle to healing alluded to by Mr Spence; and if in some, why not in many, when such irritating agencies as the ligature and its attendant irritating sloughs, however small, were banished from the wound, of which the cut surface of the bone formed a part. Mr Spence objected to try acupressure because he was satisfied with the ligature; but this was the same argument which had been employed by surgeons over and over again. Some three hundred years ago, Ambrose Paré recommended the use of the ligature for stopping hæmorrhage, instead of the actual cautery and boiling pitch which were at that time in use. It required more than a hundred and fifty years before the ligature was used in Paris; and why? because the surgeons said it was very rash to venture to condemn cauterization, a method of treatment so highly approved of by the ancients! The whole history of the old opposition to the proposed withdrawal of canteries, and the introduction of the ligature in their stead, was in one respect not unlike the matter at present discussed. Mr John Bell quotes the Professor of Surgery to the Faculty of Medicine in Paris, as opposing Paré's proposed reform, in the following terms:—"It was then very forward, rash, and presumptuous, in a certain person, to venture upon condemning the cauterizing of bleeding vessels (after cutting off a mortified limb), a method so highly and continually commended and approved of by all the ancients; teaching in opposition to that without any authority, without knowledge, without experience, without good sense, some new method of his own of tying arteries and veins." (Principles of Surgery, vol. i.) Had we not heard the same argument, in nearly the same words, in our own day? As an illustration of the advantages to the country surgeon, of compressure over the ligature, Dr Simpson begged to refer to one of Dr Hamilton's cases—his third. It was a case of axe-wound of the wrist, and division of the radial artery. Dr Hamilton tied easily the distal end of the divided artery, because that end was in sight. But the cardiac end of the vessel was so retracted that it could only be secured by a ligature after some considerable and perhaps difficult dissection. Instead of using his scalpel for this purpose, Dr H. compressed quite successfully the hidden artery with a needle, which he removed some thirty or forty hours after. Surely the practice was here, as it would be elsewhere, infinitely simpler and safer than attempting to cut down upon the retracted artery and secure it with a thread.

Mr Spence attached no value whatever to the argument regarding the utility

of new practices, drawn from the fact that important discoveries had at first met with opposition. Every system of quackery might be supported in this way; and acupressure, like every other novelty, must be judged on its own merits.

Dr Handyside observed that, as ovariectomy had met with a reception from a late meeting of this Society very different from what it had received when first brought under their notice, so he hoped in the course of time to see greater unanimity in Edinburgh regarding the advantages of acupressure. A less favourable opinion was entertained regarding it among surgeons here than elsewhere, because it had been less employed here than in other places; for it had been found that all who had tried it approved of it. Of course our experience of it was still not very large, and time would be required to lay a sufficient number of statistics before the profession. Many surgeons had been very successful in not meeting with secondary hæmorrhage; he himself, though he could not pretend to the experience of the chair (*Mr Spence*), had never met with a case of secondary hæmorrhage. *Professor Syme*, when speaking, in his *Principles of Surgery*, of the liability to hæmorrhage, said, that if the ulceration by which the ligature was separated was too rapid, we might have hæmorrhage in from three days to three weeks. Now, from this it would appear that this great surgeon had met with secondary hæmorrhage, and that he considered the use of the ligature predisposed to it. When in Paris last autumn, *Dr Handyside* had seen several distinguished surgeons, and had conversed with them on the subject of acupressure. *Velpéau* had not tried it, and did not speak very respectfully regarding it. *Nélaton* was much interested about it; he said he had lately had a case of varicose aneurism in the popliteal space, where he had employed two ligatures with an unsuccessful result, but where he believed if he had used acupressure he might have saved the patient. *Maisonneuve* had not himself tried acupressure, but he expressed himself as satisfied that it would be found to be the successful mode of treating aneurism. *Dr Handyside* observed that we were scarcely yet in a position to declare that primary union took place more frequently after the use of the needles than of the ligature; but the circumstances which had induced him to try acupressure were these,—the rapidity with which the bleeding could be stanchd; the facility with which the needles could be applied, and the small number of assistants required; the few hours during which the needles required to remain; the avoidance of ulceration and the risks attending it; and the general impression that, if no foreign body were present, healing would occur sooner, and generally by the first intention.

Mr Spence, in reference to *Dr Handyside's* allusion to *Professor Syme*, would remark, that it must be kept in mind that the work referred to was an elementary one, addressed to students, and that though the writer was bound to mention what *might* occur after application of the ligature, it did not follow that he had had many cases of secondary hæmorrhage himself, or that he thought the risk of its occurrence great.

III. GINGIVAL DIPHITHERITIS IN LYING-IN WOMEN.

Dr Matthews Duncan read a notice on this subject, which will be found at page 506 of the last number of this Journal.

IV. OIL OF JUNIPER AS A DIURETIC.

Mr Benjamin Bell stated that he had lately seen the oil of juniper prove very useful as a diuretic. His patient was suffering from disease of the heart; there was great anasarca and ascites, and, notwithstanding the use of various diuretics, the urine continued very scanty. *Professor Simpson* saw the case in consultation, and recommended that half a drachm of oil of juniper should be poured into a tumbler of boiling water, and that the patient should inhale the vapour. This was done three or four times a-day, and under this treatment the kidneys soon began to act freely, and the dropsy rapidly disappeared. *Mr Bell* had since employed the same treatment in another case, but though some diuresis had been produced, the results had not been so satisfactory.

Professor Simpson stated that he had brought this mode of administering oil of juniper before the Society many years ago; he had employed it in many cases, and generally with satisfactory results; it was, undoubtedly, the most agreeable mode in which a diuretic could be administered.

SESSION XLIII.—MEETING II.

2d December 1863.—JAMES SPENCE, Esq., *President*, in the Chair.

I. TUMOUR OF LOWER JAW.

Mr Spence showed a tumour of the lower jaw, on account of which he had lately removed more than half of the bone. The tumour was chiefly confined to the horizontal portion, but encroached upon the angle; it had made rapid progress, having attained its present size in six or eight months. It was removed by disarticulating the jaw and sawing through the bone a little to the right of the symphysis, so as to go well beyond the disease. The patient went on favourably for the first eight days after the operation, when she was suddenly seized with rigors and other symptoms of pyæmia, and died soon afterwards. Such cases generally proved favourable, although at first the appearances might not be very promising; but in cases of malignant tumours other circumstances besides the mere operation must be taken into account.

II. MALIGNANT TUMOUR GROWING FROM BASE OF CRANIUM.

Mr Spence showed a specimen of malignant disease (medullary sarcoma) growing from the base of the skull, which was further interesting in a medico-legal point of view. A boy was brought to the Infirmary by his parents, who gave the following history of the case:—About two weeks before, while returning from school, he was struck in the face with a stone thrown by another boy. As the result of the injury the eye and forehead became blue. After this, however, they became red and painful, and pointing occurred. The boy was seen by a medical man, who said he felt fluid, made an incision, and evacuated a little matter. The boy was brought to the hospital, and, from the history of the case and the feeling of the swelling, *Mr Spence* thought the case was one of acute necrosis resulting from the blow. The incision was accordingly enlarged, and a little pus escaped; on introducing a probe, bare bone could be felt; the diagnosis then was so far confirmed, but the symptoms did not run the ordinary course of a case of that kind. Soon symptoms of a different kind manifested themselves; there were pain, restlessness, and acceleration of the pulse. The eye was gradually protruded, and it soon became evident that the growth was of the medullary character. The boy died, gradually exhausted by bleeding, which frequently recurred. In the preparation laid before the Society, the right eye was seen pressed outwards by the tumour; the left was also pushed aside. When examined from within the cranium, a mass of disease, growing apparently from the ethmoid cells, was found to project into the skull, and to occupy the whole base of the cranium. The parents wished to make the case a medico-legal one; but *Mr Spence* had given them his opinion that the disease could not possibly have arisen from the blow alone, although the injury might have made its growth more active. But it had since turned out that there was no positive evidence that the boy had been struck by a stone at all.

III. GASTRIC ULCER WITH OBSCURE SYMPTOMS CAUSING DEATH BY HÆMORRHIAGE.

Dr Haldane exhibited a stomach affected with a simple ulcer. The patient, a man between fifty and sixty years of age, was admitted into the Royal Infirmary on the 19th of September last, suffering from cough and dyspnoea, accompanied with swelling of the legs. There was pretty copious expectoration of a muco-purulent matter, and occasional vomiting of a light-coloured fluid. He also complained of a feeling of beating in the epigastrium, which caused him considerable uneasiness. On physical examination there were the

ordinary signs of emphysema, bronchitis, and enlargement of the right side of the heart. Under treatment the patient improved, the breathing was much relieved, the vomiting ceased, and the swelling of the legs disappeared. About the middle of November, the dyspnoea became somewhat aggravated after exposure to cold, and the swelling of the legs returned. The palpitation and uneasy feeling in the epigastrium also increased; and, on examination, the hepatic dulness was found to be somewhat extended, filling the epigastrium. During the night of the 19th of November, the patient had two severe attacks of hæmatemesis, vomiting on each occasion about two pints of dark grumous matter. The vomiting recurred once on the evening of the following day, and the patient gradually sank and died on the morning of the 22d.

On post-mortem examination the lungs were found highly emphysematous anteriorly, cedematous posteriorly. The heart was much enlarged, the right ventricle, in particular, being dilated and hypertrophied. On examining the abdomen, a small puckering was noticed in the anterior wall of the stomach, about an inch from the pylorus, close to the lesser curvature. In removing the stomach a portion of its posterior wall gave way at a point corresponding to where the puckering had been noticed anteriorly, and some dark grumous matter escaped into the lesser omentum. On laying open the stomach the ulcer was found to be of an irregularly circular form, and about the size of half-a-crown; it was situated principally in the posterior wall, but partly in the lesser curvature. At the point where the coat of the stomach had given way during removal the base of the ulcer had consisted merely of the thickened and somewhat puckered serous coat. The stomach contained a small quantity of a dark fluid similar to what had been vomited during life. There was no thickening or contraction of the pylorus. In the small intestine, extending down as far as the cæcum, a tarry-looking matter was found. Dr Haldane remarked that no suspicion had been entertained of the existence of an ulcer of the stomach. When the patient was admitted he was manifestly suffering from emphysema and bronchitis, and the vomiting was supposed to be occasioned by his frequent and severe fits of coughing. As the pectoral symptoms were relieved, the vomiting gradually disappeared. When the cough and dyspnoea became aggravated, uneasiness in the epigastrium became marked; and as the hepatic dulness was found to be extended, this symptom was presumed to depend upon congestion of the liver. Lastly, when the hæmatemesis set in, in the absence of any other apparent cause to account for it, it was supposed to depend upon rupture of some of the small veins of the stomach, due to interference with the portal circulation, the result of hepatic congestion. On examination, however, the source of the hæmorrhage was found to be an ulcer, which had very nearly penetrated the coats of the stomach; and Dr Haldane considered the case interesting as showing how far the disease might advance without giving rise to any characteristic symptoms. Very probably, in the absence of thoracic disease, the gastric symptoms might have assumed greater prominence; but, under the actual circumstances, they were so masked that the existence of this condition of the stomach was not even suspected.

IV. MULTILOCLAR CYST REMOVED BY OVARIOTOMY.

Dr Thomas Keith showed a multilocular ovarian cyst which he had removed about ten days ago. The patient was a young lady, sixteen years of age, and the tumour had been growing for twelve months. Considerable difficulty was experienced in consequence of the firmness of the adhesions, so that the tumour gave way in some places. As it was impossible to remove the tumour entire, it was necessary to cut down and diminish the size of the cysts. In doing this, so much hæmorrhage took place that the operation had to be finished as rapidly as possible. The patient had gone on very well. Dr T. Keith mentioned that he had performed ovariectomy nine times, and that six of the patients had recovered, and three died. The tumour now shown to the Society was the second smallest which he had removed. The solid portion of the growth weighed twenty pounds, and the cysts contained about a gallon and a half of a thick

fluid. The largest tumour he had removed weighed one hundred and twenty pounds; while the average weight of the nine was about fifty pounds.

V. AMPUTATION AT ANKLE-JOINT BY INTERNAL LATERAL FLAP.

Dr P. H. Watson showed the cast of a stump where amputation had been performed at the ankle-joint by the internal flap.

Mr Spence said that not merely were the results of this mode of operating good, but that the stump healed sooner than after the ordinary method, as discharge was free, and bagging of matter was prevented. This method was not so generally applicable as the usual mode, but perhaps it might be more often employed than was the case at present. *Mr Spence* had seen a boy a day or two ago on whom he had operated by this method about four months previously, and it was scarcely possible to tell whether it had been done by an internal flap or the usual method.

Dr P. H. Watson remarked with reference to the rapidity of healing that he had lately removed both feet. In the case of one of them he had been obliged to operate by the internal flap, while the other was removed in the usual way. Both stumps healed at precisely the same time, and the results in the two cases were equally satisfactory.

VI. UTERINE HEMATOCELE COMPLICATING EXTRA-UTERINE GESTATION.

Dr Matthews Duncan exhibited a preparation taken from a woman whose history was the following:—She was married, and had had a family. Probably nearly three and a half months before her death she fell in the family-way, and the gestation was extra-uterine. Of this pregnancy she had no symptoms whatever except the arrestment of menstruation. Of this remarkable circumstance her direct testimony was evidence; and two days before her death, when it was suggested to her that she might be in the family-way, she smiled, and expressed her assurance of the contrary. About a month before her death menstruation began, and it was accompanied by shivering, feverishness, pain in the back and lower part of the belly, chiefly on the right side, and bearing down. The bloody discharge continued till she came to the hospital, a few days before her death. The symptoms just named evidently denoted the formation of the uterine hematocèle. Two days before her death, her painful symptoms had almost disappeared. She allowed her hypogastrium to be freely handled, which she could with difficulty endure three days before; and she was cheerful and contented. In the evening the hematocèle became ruptured, and the discharge of its bloody contents into the general peritoneal cavity caused extensive peritonitis, with the usual symptoms. After this she survived only thirty-six hours.

The physical examination during life revealed the same conditions as were discovered by its repetition before the autopsy. Manipulation of the hypogastrium could detect no tumour properly so called; only a tight, full, or a matted feeling was very distinct. Percussion of the same part showed absolute dulness over a somewhat rectangular space above the right horizontal ramus of the pubis, and measuring about three inches from above downwards. In the other hypogastric regions there was not absolute but only comparative dulness. The fundus of the uterus was pushed forwards to the upper part of the symphysis, but its cervix was nearly in a natural situation. The cervix was somewhat enlarged, but presented no softening. The uterus was considerably hypertrophied, but its cavity was inconsiderably elongated—not measuring above a line more than the ordinary length of two and a half inches. Behind the cervix uteri, and occupying the posterior half of the upper region of the pelvis, there was great fulness, and in the centre a distinct tumour could be felt, having scarcely any tenderness. In consequence of the condition of the lower belly, this tumour could not be felt from above.

At the autopsy, the following appearances were observed:—On opening the abdomen a quantity of bloody fluid escaped. The general peritoneal surface showed signs of acute inflammation, the intestines cohering by recent

lymph. Above the right horizontal ramus of the pubes, and immediately behind the abdominal wall, was a cavity filled with bloody fluid. This cavity extended from the brim of the pelvis on the right to the crest of the left ilium, but on the left side it was covered anteriorly by a layer of coherent small intestines. The bloody fluid was intra-peritoneal, the sac being formed by strong but not old peritoneal adhesions of the abdominal walls, small intestines, and other neighbouring parts. The peritoneum of the sac was at least three times its natural thickness, and had a roughish surface of adherent lymph. The left prolongation of the sac opened into the general peritoneal cavity. [The acute symptoms preceding death began in the same part.] On laying back the bowels, one fold of small intestine was found adherent to a mass about the size of a very large orange, somewhat flattened antero-posteriorly, and lying between the upper half of the sacrum and the uterus. This tumour was evidently sub-peritoneal. It contained clotted blood and a fœtus of less than two months' growth. The fœtus was slightly decomposed. It was attached by the cord to the placenta, inserted upon the anterior wall of the cyst. The walls of the cyst varied in different parts from a line to half an inch in thickness. A rupture of considerable extent was found in the lower part of the anterior wall of the cyst.

VII. VALEDICTORY REMARKS BY THE PRESIDENT.

Mr Spence, on vacating the chair of the Society, delivered the following valedictory remarks:—

Gentlemen,—It has lately become the custom for your Presidents to reserve most of their observations for a valedictory address; but, as in my case, circumstances necessitated me to deliver some introductory remarks, I shall proceed at once to give an account of my stewardship; in other words, to take a brief retrospect of our transactions during the period of my Presidentship. I do so all the more readily because I feel that the review I am about to submit to you will prove that the Medico-Chirurgical Society has lost none of its vitality, and that, both as to quantity and quality, the work done during the last two sessions will stand comparison with former periods.

In attempting a brief resumé of the communications read before the Society during my period of office, I shall group them as they belong to the departments of Medicine, Surgery, and Midwifery.

In the department of MEDICINE, Dr Begbie's valuable communication on *Diphtheria* is one which must be fresh on the memories of all who heard it. The practical observations of the author, connecting as they did his experience of the disease during the epidemic of 1826 with that of the disease as it now prevails, and including a period of a quarter of a century, during which he had not met with a single case of diphtheria, whilst he was able at once to recognise it in some of the sporadic cases which preceded the present epidemic, were at once interesting and instructive. At the same time, his account of what I may call the natural history of this malady, founded upon a careful description of cases, an investigation of the circumstances under which they occurred and progressed, and the conditions which seemed to favour the spread of the disease, combined with the clear, definite, and practical deductions with which he concluded, formed a memoir of such value that I feel that not only this Society, but the whole medical profession, are deeply indebted to its author.

Dr Keiller's paper on *Cancrum Oris* formed a valuable addition to the literature of a disease, the pathology and treatment of which deserve more attention than they have hitherto received. Dr Keiller drew our attention to the different forms of cancrum oris, dividing them into,—1st, The mildest of simple follicular, or aphthous; 2d, The ulcerative and gangrenous stomatitis. The author pointed out the methods of treatment best adapted to each variety, and drew attention to the risk of blood-contamination from the unavoidable inhalation of the poisonous exhalations from the gangrenous degenerations within the mouth, and used this as one reason amongst others for recommending the free application of nitric acid to the gangrenous textures.

To Dr James Gillespie we were indebted for an important communication on the *Epidemic of Scarlatina as it occurred in Donaldson's Hospital in the autumn and winter of 1861*. After describing the course of some of the most remarkable cases, and taking a view of the general character of the epidemic, he compared it with the characters of former epidemics as noticed by the late Mr Wm. Wood and himself. Dr Gillespie combated the idea that albuminuria at some periods of the disease was a constant symptom in scarlatina, though it was frequently typical in some epidemics. He considered that three circumstances favoured its development,—1st, The intensity of the poison which gave rise to the primary disease; 2d, Predisposition on the part of the patient; 3d, Incautious exposure to cold during convalescence. In his concluding remarks on the treatment, Dr Gillespie stated that whilst in previous epidemics he had found considerable benefit to arise from the use of the warm and vapour baths in bringing out the eruption, in the epidemic in question beyond alleviating the febrile symptoms these remedies seemed to have little or no effect in promoting the appearance of eruption, and that he thought they materially weakened the children in some instances. Besides the intrinsic value of this communication, we were indebted to it for eliciting many valuable observations from Dr Sellar, Mr Bell, Dr Haldane, and others, who took part in the discussion which followed.

The subject of *Exophthalmic Bronchocele*, as brought under our notice by the able and elaborate papers of Professor Laycock and Dr Warburton Begbie, occupied the Society during three different evenings of last session.

Since the publication of the able paper of Dr Begbie, senior, originally read before this Society, considerable attention has been paid to the nature of exophthalmic bronchocele, and the communications of Professor Laycock and Dr W. Begbie, valuable in themselves, were in my estimation none the less valuable that the authors looked at the pathological phenomena from different points of view, at least as regarded their causation. Professor Laycock considered the phenomena as originating in the nervous system, and the affection to be a true cerebro-spinal neurosis. Whatever opinions may be held as to the correctness of this view, I think there could be but one as to the value of the method of investigation pursued by Professor Laycock in applying the results obtained by direct physiological experiments to elucidate the pathological phenomena, a method much needed as a corrective of modern tendencies to look too much to mere morbid structure, and consequently too often to draw conclusions as to the nature of disease rather from studying its results alone, than from the phenomena of its progress. At the same time, the method alluded to requires great caution as to the physiological data on which we found; for those who have had much experience in such experiments as those referred to by Professor Laycock best know how numerous and difficult of elimination are the sources of fallacy with which they are beset. Dr Warburton Begbie, whilst recognising that the true pathology of this form of bronchocele lies both in the blood and nervous systems, considered the state of the blood to be the "primum mobile" of the diseased phenomena, and supported his views by reference to cases and to the absence of certain other phenomena which ought to have been present had the disease been one commencing in the nervous centres.

When we reflect how intimate must be the relations, the actions, and reactions of the circulating fluid, and of the nerves of the vaso-motor system on each other, it will be obvious, how almost impossible it is to decide in which the point of departure from healthy action begins; and the discussion brought to my mind the views of the late Dr McCartney of Dublin, in regard to inflammation, who thought he had settled that knotty point, the proximate cause of that diseased action, by defining it to consist in a sense of injury felt by the organic nerves, which, from their intimate connexion with the bloodvessels, led to excited vascular action in the part so affected. But whatever our opinions, our best thanks are due both to Professor Laycock and Dr Begbie for having brought the subject so thoroughly before us.

A notice of two cases of *Murraïn occurring in the human subject*, detailed by

Mr Hislop of Houstoun, Renfrewshire, was communicated to the Society by Dr George Balfour, accompanied by very important remarks. The paper and the discussion which followed, and especially the observations of Professor Gamgee, were of great interest, and had most important practical bearings. But your President feels bound to confess that his feelings on that occasion were of the kind generally said to be more easily understood than described, and prevented him taking a dispassionate view of the subject—"milk and butter of the kine," which had hitherto formed important articles in his dietetic creed, were exhibited to him in such a new and lurid light, that even the free use of water by the dairyman, which he had hitherto regarded as an unmitigated evil, now rather appeared a mitigation of a greater. He arose from the discussion, like the Wedding-Guest when released from the Ancient Mariner, at once "a wiser and a sadder man."

In the department of PSYCHOLOGICAL MEDICINE, our Society has been very specially favoured during the period which my review embraces. At one of our earliest meetings, Dr Mitchell (Deputy-Commissioner of Lunacy) read a most important and elaborate paper embodying the results of his investigations as to *Marriages of Consanguinity and their influence on the offspring*. The author began by noticing the sources of fallacy in such investigations,—all cases marked by misfortune rising up to our minds are apt to lead us to influences beyond the truth, and so to exaggerate an evil sufficiently great in itself. He described the plan he pursued in collecting his facts,—viz., taking small communities and examining into the history of every marriage of consanguinity, and also of those in which no kinship existed, and then comparing the results. He showed the influence of consanguine marriages on the production of imbecility and idiocy to the lesser degree of deafmutism, and as being otherwise injurious to the offspring. In explaining his views as to the probable causes of the bad results of such alliances, Dr Mitchell specially drew attention to the probability that all transmissible peculiarities would be intensified, both parents being more or less affected, as for example in strumous families. Dr M. also reviewed the arguments in favour of consanguine marriages, founded on the system of breeding in and in cattle for the so-called improvement of the breed, and stated that he considered the breeds so produced rather as pathological than healthy specimens, however profitable they might prove to the breeders; as, in fact, proving the correctness of the view he had stated, as the system was had recourse to to intensify certain transmissible peculiarities of breed, rather than to produce a perfect animal of the species. In connexion with this, I was rather struck by noticing lately in an advertisement of a prize cattle competition, that the prizes were not to be awarded for size or fatness, apart from form and other qualities, which looks as if the principle urged by Dr Mitchell had forced itself upon the minds of practical men. Dr Mitchell's communication, involving, as it did, questions of great physiological and psychological interest, and having bearings on the interests of the community which can scarcely be overrated, was at the same time a model as to the method of handling such a subject, and led to the Society being favoured by some very important observations from Dr Browne, Commissioner of Lunacy, and other members, who took part in the discussion which ensued. I think I may fairly congratulate the Society on having broken ground on this important question, one which I see is about to engage the attention of the French legislature, directions having been just issued to the authorities in the different communes to collect data in reference to such marriages of consanguinity.

The subject of *Homicidal Mania* was brought before us by Dr Yellowlees, in the form of a painfully interesting biography of William Smith, for more than twenty years an inmate of Morningside Asylum. Dr Yellowlees made the case furnish us with valuable comments of great physiological and medico-legal interest. It was strange and instructive to trace, in the history of Smith's case, the gradual development of the morbid mental conditions, from a peculiar kind of cleverness and originality, gaining for him a sort of literary character, to vanity, an absurd self-esteem, and eccentricity, which drew on him the

notice and exposed him to annoying attentions of thoughtless boys; and then, when his demands for summary punishment on his tormentors were not complied with, his wounded vanity, venting itself at first in denunciations of one magistrate, speedily led the eccentric egotist to assume that society at large denied him substantial justice, and to infer that he must take it for himself, till his weak mind, losing its balance completely, all merged at last into the one absorbing passion to destroy life. Then the physical changes observed, the gradual alteration in the size and form of the cranium, and the diseased condition of brain, as exhibited on the post-mortem examination, were both curious and suggestive.

Great care, I think, should be exercised in regard to the way in which we view the morbid appearances in such cases, in relation to the mental phenomena observed during life. If, in the structural lesions observed after death in the cases of bodily disease, it be often difficult to trace the origin of diseased action—often difficult to decide how far such lesions are causative or resultive, in this strangely compound being of ours, this body, soul and spirit,—how much more difficult to trace the actions and reactions of mind and body on each other. How apt we are to look to the material alteration in the brain as explaining all. Seeing only as through a glass darkly, we should approach such questions humbly and reverently; but I confess that, without disregarding these organic changes in the brain, we might look at such a case advantageously from another point of view. What an example of an ill-disciplined mind uncurbed, or rather its vanity ministered to, losing at last all self-control, mastered by an almost demoniac passion,—the mental state reacting on and irritating the brain, and so leading to slow structural lesion, till at last the very outward form becomes altered and degraded! Surely such a view is more hopeful as to the practical question of treatment, than if we assume organic disease of the brain as the exciting cause. Was there not a point in this man's history when a judicious disciplining of, and giving a right direction to, his mental powers might have changed the whole current of his life, and made him a useful member of society?

Dr Clouston's elaborate and valuable memoir on the *Connexion between Insanity and Tuberculosis* I was not privileged to hear, as it was brought before the Society on the only occasion on which I was absent; but, from having read it subsequently, I think it is entitled to take a very high place in the literature of the subject, and I doubt not must have furnished the Society with matter for interesting discussion.

Both of these gentlemen have left us for new and important spheres of action, but I trust they will not forget to favour us occasionally with such communications as those I have just referred to.

In the department of SURGERY this Society has never lacked for material; and during the last two Sessions I find a long catalogue of surgical communications, from which I shall select for a brief notice some of the more interesting.

The subject of *Acupressure as a Substitute for Ligature in Surgical Operations* has been very fully discussed; and, as represented by the communications of Dr Handyside and Professor Simpson, it has, I may say, formed the beginning and the end of my presidential career. In these gentlemen, whose papers I have referred to, it found able and energetic advocates, who said all that could be said in its favour; and whilst it would be affectation on my part to pretend to have been converted by their arguments, I am sure that neither I nor those who, like me, still hold by our past experience of the ligature, are the less sensible of the value of their communications, which were the means of allowing the subject to be so fully ventilated that it may now be safely left to the quiet reflection and conviction of each individually.

Through the medium of Mr William Brown we were favoured with a most interesting communication on *Gunshot Wounds* and their treatment, by Dr Neill, Assistant-surgeon 65th Regiment, founded on his own experience in the late war with the natives in New Zealand. The author detailed some curious cases of wounds; and as regarded the general plan of treatment recommended,

it was pleasing to find the author's experience corroborating the great modern surgical principle of simplicity in the dressing, as exemplified by the success which had attended the use of "plain cold water" in what were once reckoned injuries of a peculiar kind.

Dr Watson's paper on the *Radical Cure of Exomphalos in the Adult* is deserving of special notice, as being an addition to our surgical resources in a very troublesome and dangerous form of hernia. The plan of operation which Dr Watson recommended, which had so fully succeeded in the case he recorded, was at once simple and efficient. It consists in passing a needle armed with a silver wire backwards, forwards, subintegumentally, through the fibrous margin of the aperture, then drawing the parts together as the mouth of a bag or purse is drawn by its string, so as to prevent all protrusion for the time, whilst it excites such an amount of action as to ensure consolidation and permanent occlusion of the opening.

Dr Gillespie favoured us with a notice of an interesting case of *Depressed Fracture of the Sternum*, followed by abscess in the mediastinum, and symptoms of pyæmia, from which dangerous conditions the patient was so fortunate as to recover. The case, which presented some features of great practical interest, led to several members favouring the Society with their views of pyæmia.

Dr Annandale's case of *Gangrene of Foot and Leg* was interesting as an example of a fibrinous clot becoming impacted in the femoral artery—apparently not descending from the heart, which was free from all disease, but formed at some point in or near the femoral itself, in consequence of degeneration or loss of vitality in its coats. In his remarks on the case Dr Annandale entered very fully into the views held as to the causes of such obstructions, and quoted the opinions of Professors Virchow and Lister as to necrosis or impaired vitality of the arterial coats leading to coagulation at the affected part,—opinions which I could not help feeling had long ago been anticipated by Sir Charles Bell, whose researches on many points of surgical practice seem to be forgotten.

Mr William Brown's case of *Villous Cancer of the Urinary Bladder* was valuable as a carefully detailed history of the vital manifestations of a rare form of disease; and its value was increased and rendered complete by the able description of the morbid appearance, both general and microscopic, given us by Dr Joseph Bell, who conducted the post-mortem examination.

Last in order, but assuredly not least in importance, of our surgical communications, was that of Dr Thomas Keith on *Ovariectomy*, which was read at an extraordinary meeting held for the purpose. The very large attendance, even at that late period of the session, and the discussion which followed the reading of the paper, showed the interest felt in the subject. The details of Dr Keith's interesting and successful cases, and the general scope of his remarks, must be too fresh on your minds to require any comment of mine; but to Dr Keith belongs the credit of being the first to break the long line of ill-success which had attended the performance of ovariectomy in Scotland; and the hints Dr Keith threw out as to the period for operating, the importance of attending to some points in the operation, and specially as to the after-treatment, will, I believe, do much to remove some of the dangers of ovariectomy, and place it in a different position as a recognised operation than it has hitherto held in this part of the kingdom.

In the department of MIDWIFERY we have had but one communication of an obstetric character—viz., Dr Matthews Duncan's paper on *Some Effects of Imperfect Delivery in Abortion and Labour*. After detailing cases illustrative of the general and local effects induced by imperfect deliverance, Dr Duncan pointed out the value of paying attention to the peculiar and persistent foetid discharges present in such cases as a means of diagnosis, leading the practitioner to recognise the probable condition, and so to adopt means to get rid of the exciting cause. The communication, which was listened to with great attention, drew forth much conversational discussion of a practical kind. I think we should feel all the more indebted to Dr Duncan that he alone has

favoured us with obstetric contributions; and I cannot help remarking here, what has often struck me as strange, that with so many able obstetricians amongst our members, they so rarely furnish us with papers on their own "speciality." It looks almost as if there were something in our medico-chirurgical atmosphere unfavourable to the delivery of obstetric ideas. I would bequeath the duty of inquiring into the causes of this inertia as a legacy to my successor and the new council; but I may just say this as a hint, that I cannot disassociate in my mind the diminution of midwifery communications with the withdrawal of the "tea," which used to form a part of our business, and that possibly a recurrence to that normal obstetric stimulant might be beneficial.

Besides the communications I have been able to classify under Medicine, Surgery, and Midwifery, there was the very elaborate and able paper on the *Relative Weight of the Viscera of the two Sides of the Body*, read by Dr J. Struthers. The general scope of the paper was to show that the viscera on the right side being heavier, might probably determine the increased power and use of the right leg and arm. The communication was distinguished by much ingenious reasoning, and that careful accuracy of research which characterize all Dr Struthers's anatomical investigations.

In regard to the exhibition of pathological specimens, and the occasional special pathological meetings, which form such an important feature in our transactions, a very *embarras des richesses* would render it impossible even to enumerate the specimens exhibited; but I trust it will not be deemed invidious to mention the names of Drs Haldane, W. Begbie, P. Watson, Grainger Stewart, and Mr Edwards, as those to whom our thanks are specially due for their exertions in furnishing material for this department.

My task is nearly done, but I cannot help adverting to some changes which have occurred since I occupied this chair. A year ago I had the pleasure of congratulating the Society on having, after many difficulties, found a resting-place which seems, and I trust will prove, suitable for our purposes, and to put an end to those migratory habits which were certainly not conducive to our meetings being well or regularly attended. I think every thing now augurs well for our having both "a local habitation and a name."

Then, as to the changes amongst our members: several have left us for new spheres of action, and most conspicuous amongst these are two gentlemen who were amongst our most efficient members and office-bearers. I need hardly say I allude to Drs W. Gairdner and John Struthers, whose well-established reputations have obtained for them the honourable positions which they now hold. Their new duties will necessarily occupy them fully at first, and withdraw them from us for a time; but I won't say good-bye to them altogether, for now-a-days our modes of transit almost annihilate distance, and besides, I have such confidence in the energetic character of our friends, that I have good hope of seeing them occasionally at our meetings; and this I feel sure of, that come when they may, our regard for them, and our remembrance of their past services, will ensure them a hearty welcome.

It would be well, gentlemen, had I no changes to notice of a sadder kind, but death has been making blanks in our membership; and amongst them we have to mourn the loss of a very highly esteemed member, and the senior vice-president of the Society—Dr Coldstream. Amongst the many labours of love which occupied him, Dr Coldstream found time to take an active share in the business of this Society, and felt a deep interest in it. In the last letter I ever received from him, the prospects of the Society were alluded to, and with an expression of regret that the state of his health had latterly prevented him from attending our meetings, or taking so active a share in our work as he would have wished, since he had been in office. The regret was scarcely called for. Few men did more or greater work than our departed friend; but he was one of those who work energetically and persistently, but withal so quietly and unostentatiously, that we often only realize the amount of the work when we lose the man. We mourn his loss; we sympathize with those who have still

deeper cause : but the loss is ours : those who knew him well, those who knew him best, must feel that for him it is great gain.

And now, ere I say farewell, let me thank you for all the support and courtesy you have shown me whilst I occupied this chair. If I thanked you cordially when elected, for the honour you then bestowed on me, I have surely still greater cause to thank you now. Farewell has here none of the usual bitterness. I bid you farewell as your president,—only to return to the ranks to do what in me lies as a member to advance those objects we have all at heart.

Mr Benjamin Bell moved a vote of thanks to *Mr Spence* for the admirable manner in which he had filled the office of President during the last two years. *Mr Spence* had not only presided at the meetings of the Society in the most satisfactory manner, but the Society was deeply indebted to him for the many interesting communications he had brought before them; had not modesty prevented *Mr Spence* from alluding to them in his valedictory remarks, the list of papers might have been much increased.

The motion was unanimously and cordially agreed to.

VIII. ELECTION OF OFFICE-BEARERS.

The following gentlemen were appointed office-bearers for the ensuing year :—*President*—*Douglas MacLagan*, M.D. *Vice-Presidents*—*Andrew Wood*, M.D.; *Peter D. Handyside*, M.D.; *J. Warburton Begbie*, M.D. *Councillors*—*William Finlay*, M.D.; *Charles Dycer*, M.D.; *William Menzies*, M.D.; *John Gillespie*, M.D.; *John Smith*, M.D.; *Thomas Balfour*, M.D.; *Robert Bruce*, M.D.; *R. E. Scoresby-Jackson*, M.D. *Treasurer*—*George Balfour*, M.D. *Secretaries*—*James D. Gillespie*, M.D., 45 Castle Street; *Patrick H. Watson*, M.D., 10 Charlotte Square.

ROYAL COLLEGE OF PHYSICIANS.

At the Annual Election Meeting of the Royal College of Physicians of Edinburgh, held on Thursday, 3d December 1863, the following office-bearers were elected for the ensuing year :—*President*—*Dr John Graham Macdonald Burt*. *Vice-President*—*Dr David Craigie*. *Council*—*Dr David Craigie*, *Dr William Seller*, *Dr John Moir*, *Dr Robert Bowes Malcolm*, *Dr Alexander Wood*, *Dr William Henry Lowe*, *Examiners*—*The President*, *Drs Craigie*, *Seller*, *Wood*, *Douglas*, *R. Paterson*, *Wright*, *Keiller*, *Pattison*, *Cumming*, *Duncan*, *J. W. Begbie*, *Haldane*, *Sanders*. *Treasurer*—*Dr Samuel Somerville*. *Secretary*—*Dr Rutherford Haldane*. *Librarian*—*Dr J. Matthews Duncan*. *Curator of Museum*—*Dr T. Strethill Wright*. *Clerk*—*Mr Christopher Douglas*, W.S. *Auditor*—*Mr Kenneth Mackenzie*, C.A. *Under Librarian*—*Mr John Small*, M.A. *Officer*—*Thomas Marshall*.

OBITUARY.

DEATH OF MR ALEXANDER OF WOOLER.

It is not often that the death of a surgeon, whose field of practice was in a secluded rural district, demands a record from the medical journalist. But as British patriotism may have its village Hampdens, British medicine may not the less have its village Sydenhams; men whom only the accident of their position has condemned to obscurity, or to a briefness and narrowness of fame that rises scantily beyond it. That such men have been, is a truth to question which would be to deny our common nature: and we can as little question that they have had their true and wise thoughts, for which they found no channel of utterance, or could find only a faint and cursory utterance; as well as their just rules of experience and practice, that had peculiar and paramount value in their proper sphere, simply because grown within it and moulded to its wants, while acquired under a process by which much becomes tacitly unlearned that had been previously inculcated in the differently constituted field of the city hospital and school.

Among men thus hidden under position and circumstance, or of a celebrity

that belonged rather to the few and the near than to the many and the distant, the late Mr Alexander was entitled unquestionably to a foremost place. Settled for more than forty years at Wooler, a townlet on the eastern confines of the range of the Cheviots, his professional duties, from his comparative isolation, and from the nature of the district, were necessarily of the most multifarious and arduous description. Largely possessed of the confidence of a thinly-scattered population, it would have been vain to have hoped for intervals of leisure in a life so devoted; and his alternatives were those rather than hung unceasingly between exhausting labour and never assured rest. Only the utmost zeal, therefore, could find opportunities for study in the midst of such harassing occupations; and yet these opportunities were found by him, so that they who knew him well, or could judge him competently, were continually surprised with the proofs they encountered of the wideness and thoroughness of his attainments. He had no easy access to the means of giving great variety to his professional reading; but its range was nevertheless sufficiently extensive, and what he read was of the best quality, for no one could sooner detect, or was sooner revolted against, trivialities or commonplace. Singularly prompt and clear in his apprehension, he had a corresponding power and facility of expression, and, as a man habitually of cheerful mood, yet of serious thoughts, he had the happy knack in society of making his arguments convincing without rendering them disputations. Beyond his profession, his reading was always select, and often profound; and was influenced much by that vigorous bent that directed him towards mental philosophy as a favourite study, and made the writings of some of our deepest thinkers his chosen companions.

Nor were his own writings without merit of a very high order. Our readers will recollect occasional papers that have appeared under his name in the pages of this Journal, though these came with less frequency than their quality rendered desirable. But we have been indebted to him also for excellent reviews, in all of which the sterling character of his knowledge, and the force and solidity of his judgment, were fittingly represented by the clearness and vivacity of his style. He has also, we are aware, been a valued contributor to other periodicals, some of his communications dating as far back as the time when the Edinburgh Medical and Surgical Journal was under the editorial charge of Professor Andrew Duncan. Mr Alexander contributed, besides, an excellent paper to the Proceedings of the Border Medical Society, an association formed in the district in which he resided, and designed to promote the study of its medical topography, along with that of the modes and rates of prevalence of disease within its limits. A zeal among the medical practitioners less persistent than that which has continued to give much success to a club of naturalists and antiquaries within the same confines, has allowed the printing and circulation of their proceedings to drop into abeyance, for now upwards of twenty years; though these had already presented much interesting and accurate information, chiefly derived from the records of the local dispensaries, regarding the prevailing descriptions of sickness, with their attendant vicissitudes, as shown, for example, by the history of ague, and of other endemics or epidemics. Mr Alexander always felt deeply how necessary it was, in order to the possession of a satisfactory body of sanitary statistics, that we should be acquainted as thoroughly with the conditions, the character, and the proportions of occurrence of prevailing maladies throughout the country, as with the abstract causes and rates of mortality; and it was correspondingly a matter of regret with him that difficulties, which he could not regard as insuperable, should interpose to prevent this description of information from being obtained, at least approximately, through the instrumentality of a system of general organization, such as that of which the local society in question was designed, among other prospective advantages, to furnish an example.

It would scarcely be to give a fair view of the mental and literary characteristics of Mr Alexander, if we omitted to add, that recently he had in contemplation what would have probably been the most interesting, as it would have been the most extensive, of his efforts on the field of letters. His idea lay in a kind of retrospection, as well as introspection, of what had been the habits

and feelings, the incidents and surroundings, of his professional life : and that not so much individualizing himself, and still less his patients, as portraying the general position of the rural surgeon, with reference to his special range of duty, in its solitudes, its toils, its anxieties, its modest yet genuine successes, its trials, and its solaces, as all these affected himself, and afforded theme for his meditation ; and passing thence to the peculiarities of mental and physical condition, of moral light and darkness, of credulity and superstition, or of whatsoever other aspect or circumstance, as they affected the population that furnished him with the objects of his care—the most striking of the idiosyncrasies encountered, and these often nobly exemplified in the worth of the depressed and charity of the poor, being of course such as were to be found among the humblest classes of his patients. For such a picture, serving, in so far, as a generalization of the outer and inner life of the rural surgeon, he had no model before him : nor could he find more than the hint of some faint analogies of project in such a work as a White of Selborne produced in natural history, from observation within the area of his clerical duties ; or even as Munaret evolved from the experience and contemplation of medical life in town and country in France ; or as Montaigne curiously constructed, in flitting from the objective to the subjective, and making, within a turret of his mansion, his own mind the centre for a multiform course of reflection. But we know that each of these authors was to a certain extent present to his thoughts ; and, though his work would have possessed a character different from them all, he yet saw something in their methods from which he could draw suggestions for his own procedure, while he moulded his unlike materials according to his own bent. We fear, however, that in the execution of this project he never advanced beyond its threshold ; and we have to regret the loss of what would have been instructive as a lesson, and curious and valuable as a record of a particular phase of life and manners, both in itself, and on the score of the quality of the medium through which it would have been derived.

Happily for the community among whom Mr Alexander lived, the extent of his practice, and the amount of pecuniary advantage he derived from it, were equal to all that his position admitted, though not to all that his merit could have secured for him elsewhere. Sure we are that, in our great centres of population, there are many whom far inferior talents, and a far less sound and discriminating knowledge, have advanced to eminence. Besides his purely medical practice, there was no exigency of either a surgical or an obstetrical description which he was not prepared, in his remote situation, to meet with energy and skill, and all the ordinary capital operations, including more than once lithotomy, were performed by him with success. Thus, if we have thought of him, and of his clear, philosophical spirit in relation to Sydenham, it seems as if we ought to recollect also how much was required of him, or was really in an unusual degree accomplished by him, as a disciple of a Cheselden or Smellie. It was on the immediate field of his exertions that the hand of death arrested him. While riding to visit a patient, he was seized on the 23d of November with paralysis, which gradually deepened into apoplectic coma, and proved fatal on the fourth day. He had reached his sixty-seventh year.

If what we have written be not the character of a man famous to the world, we must have failed greatly in our appreciation of him, or in our experience and estimate of professional worth generally, if we have described a commonplace one ; and there are many who knew him who would have rightly charged injustice against a lower commendation. At all events, we have followed him now to that point at which it has become the more important question for himself, whether, and in what degree, he merited distinction, rather than how far, or in what measure, it was open to him or attained by him. That life was not wasted whose not short tract was passed worthily and usefully : and if he deserved to have had a wider sphere, and a higher appreciation, the loss was intrinsically far less his than that of society. His funeral was an occasion of public and solemn observance ; for the community, that had been bereaved of him, knew him as a wise and upright man, and regretted in him a long-tried counsellor, friend, and help, in all relations not less faithful than able.

DEATH OF DR ANDREW POW.

It is with great regret that we record the death of Dr Andrew Pow, which took place at Edinburgh on the 16th of December. Dr Pow was a graduate of the University of Edinburgh, and after spending upwards of a year as a resident medical officer in the Infirmary, proceeded to the Continent, and pursued his studies in the schools of Berlin and Paris. He returned to Edinburgh in 1861, and was shortly afterwards appointed to two of the dispensaries of this town. The cause of his death was typhus fever, contracted in the discharge of his duties in connexion with the Royal Public Dispensary. Dr Pow was a man of great promise in his profession, and his amiable disposition and engaging manners had endeared him to a large circle of friends.

SCOTTISH VACCINATION ACT.

WE beg to remind our readers in Scotland that the Compulsory Vaccination Act, passed last session, is now in operation. Under its requirements every child born in Scotland after the 31st of December 1863, must be vaccinated, within six months after its birth, either by the vaccinator appointed under the provisions of the statute, or by some other registered medical practitioner.

The certificates which the vaccinator or other medical practitioner may be required to grant are the following:—

1st, Where the operation proves *successful*, he must furnish the child's parents or guardians with a certificate to that effect.

2d, Where he is of opinion that the child is *not in a fit state* to be successfully vaccinated, he must furnish a certificate to that effect, which shall remain in force for two months; to be renewed, if necessary, at the expiry of that period.

3d, If, after these successive vaccinations, the medical practitioner shall be of opinion that any child is *insusceptible* of the vaccine disease, he is required to deliver to the parent or guardian a certificate to that effect.

Copies of these certificates have been furnished to the various Registrars of Births, Deaths, and Marriages, and will be supplied to the registered medical practitioners in their respective districts.

PUBLICATIONS RECEIVED.

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| Bricka,—Det kongelige Sundhedskollegiums Aarsberetning for 1862. Redigeret af Dr Th. Bricka. Copenhagen, 1863. | Hospital. By H. Lee, Surgeon. London, 1863. |
| Familiar Epistle, A, from an Old Acquaintance. London, 1863. | Maclachlan, — Diseases and Infirmities of Advanced Life. By Daniel Maclachlan, M.D. London, 1863. |
| Fresenius,—Qualitative Chemical Analysis. By Dr C. R. Fresenius. Sixth Edition, edited by J. Lloyd Bullock, F.C.S. London, 1864. | Nightingale, — Notes on Hospitals. By Florence Nightingale. Third Edition. London, 1863. |
| Holt,—Stricture of the Urethra. By B. Holt, F.R.C.S. Second Edition. London, 1863. | Swaine,—Obstetric Aphorisms. By J. G. Swaine, M.D. Third Edition. London, 1864. |
| Lee,—Introductory Address at St George's | Williamson,—Military Surgery. By George Williamson, M.D. London, 1863. |

PERIODICALS RECEIVED.

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| Bibliothek for Læger, femte Række,—Jan., April, and July. Copenhagen, 1863. | Gazette Médicale de Paris,—Nos. 48 to 51. 1863. |
| British Medical Journal,—Nov. 28, Dec. 5, 12, 19, 26. London, 1863. | Journal de Médecine et de Chirurgie,—December. Paris, 1863. |
| Dublin Medical Press,—Nov. 25, Dec. 2, 9, 16, 23, 1863. | Medical Times and Gazette,—November 28, December 5, 12, 19, 26. London, 1863. |
| Gazette des Hôpitaux, — Nos. 139 to 150. Paris, 1863. | Revue de Thérapeutique Médico-Chirurgicale,—December 1, 15. Paris, 1863. |
| Gazette Hebdomadaire de Médecine, etc.—Nov. 27, Dec. 4, 11, 18. Paris, 1863. | Vierteljahrsschrift für die praktische Heilkunde,—Vol. 4. Prague, 1863. |

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Sketch of the Early History of the Medical Profession in Edinburgh.* Being an Address delivered at a *Conversazione* in the Hall of the Royal College of Surgeons of Edinburgh, on 22d January 1864. By JOHN GAIRDNER, M.D., Fellow, and formerly President, of the College.

“What seest thou more
In the dark backward and abysm of time?”
—*Tempest*, Act i. Scene 2.

ABOUT four years ago, on an occasion similar to the present, I undertook, at the request of the authorities of this College, to give you some account of its past history. In preparing the necessary materials for this purpose, I every now and then stumbled on curious and interesting matters which I could not then take time to investigate, but which, like tempting veins of sparkling ore, seemed strongly to invite me to the laborious operation of the pick-axe. Since that time, when leisure permitted and opportunities presented themselves, I have made various explorations, with results of very various degrees of importance; a large proportion of those results, though not devoid of interest, being quite unfitted for the purpose of my present address. In presenting you with a selection of those which appear to me most worthy of your attention, I can scarcely hope to give the kind of interest to my subject which belonged to the more connected narrative of my former address. But I shall do what I can to reward you for your trouble in coming to listen to me; and I am not without hope that I may be successful in eliciting from others some of those hidden treasures of antiquarian information which are no doubt stored up in many unexplored recesses.

You will please to observe that my subject is the early history of the *medical profession* in Edinburgh—not, as formerly, the history of our College. Yet it will certainly be in some degree supplementary to what I have already given you, because the history of the College has always, and especially in early times, been to a great extent that of the profession in this city, and also because its records will form the most prolific source of my information.

There can be no doubt that our profession must have had a large share in the stirring events by which, in the centuries through which it has lived, the history of our country has been distinguished. The manners, morals, religion, modes of thinking, and form of government of Scotland have all been greatly changed. We have, as a nation, been well schooled by adversity, that "stern, rugged nurse" of the virtues, which, alternating with fitful gleams of prosperity, like sunshine struggling through the clouds of a tempestuous day, has deeply, perhaps indelibly, impressed our national character. The relation which our busy profession bore to those mighty changes, and *their* influence in promoting and retarding *its* progress, are subjects of which you will probably desire to know more than I or any one living can tell you. I am only able to afford you a few glimpses of my subject, such as I should scarcely have ventured to offer you, but for that kind indulgence of which I have already had such flattering experience.

I have to acknowledge, as on the former occasion, the valuable aid which I have received from various quarters; and more especially from Mr W. Fraser and Mr Joseph Robertson of Edinburgh, and from the Rev. Mr Brewer and my youngest son James, both of London,—all of whom are professionally acquainted with the history of those times of which I shall have to speak.

I have told you that the surgical part of our profession had its cradle here, as in London and elsewhere, among the tradesmen of the city, was associated with the barbers, and was intrusted with a monopoly necessary to men whom the government could not protect, and who were therefore obliged to co-operate for the vital purpose of self-defence in a lawless age. If this state of things, historically considered, appear to you degrading to us, I greatly differ from you. Ancient institutions resemble ancient families. Some of these, rejoicing that their

"blood
Has crept through scoundrels ever since the flood,"

are proud of an origin which connects their family history with deeds of rapacity and of savage violence. Some owe their laurels to the favour, perhaps to the vices of the powerful; while some, altogether unaided by power, have fought their own way to the position which they hold, by the steady pursuit of objects beneficial to mankind. We cannot be responsible for what happened before we first crept upon the surface of our planet, and therefore there can be no just ground, in these different modes of origin, either for self-congratulation or for self-abasement; yet, as a mere matter of taste, I would rather that the Lyon King-at-arms had emblazoned a razor on our shield, than that he had decorated it with that bend sinister with which many glorify themselves, as establishing their descent from some licentious king and from his paramour, both probably alike contemptible.

The fact that the practitioners of the healing art in all its forms,

and at every period, had but small favour and little patronage from the great ones of the earth, has been useful to us in many senses. In darker days, the lawyer was made the instrument of the grossest extortion, and was not suffered, either as a judge or as a pleader, to be guided by any fixed principles of justice. The theologian, under various pretences, was made the slave of consistories, of parliaments, and of foreign ecclesiastical authorities, and was deprived of his right to employ the powers of his own mind on his own subjects, or at least to speak with freedom his own real thoughts. Both law and theology thus suffered by the miserable thralldom to which they were subjected. It has been quite otherwise with medicine, and with *its* professors, who have almost always enjoyed the high privilege "*et sentire quæ velint, et quæ sentiunt dicere.*" We have had many schools and many sects; but happily for us—happily, too, for those who do us the honour to consult us—we have ever been totally unacquainted with any such thing as a jurisdiction over our professional convictions. We encounter medical errors of opinion all the more confidently, because no human power selects for us the argumentative panoply in which we go forth to the battle. Had our medical orthodoxies and heterodoxies been fitted for engines of power in the hands of statesmen and of priests, we should have been just what the other learned professions were. But even the bluff King Henry VIII., the veriest pope in theology, and, in his own conceit, very learned in physic also,¹ did not lop off the heads of physicians or surgeons for differing from his infallibility on the subjects of their profession.

The humble origin, therefore, of the Surgeons, amidst the handicraftsmen of a city, was not without its attendant advantages. The more humble it was, the greater was the merit of those who rose above it. I heartily admire the spirit of the successful blacksmith, who, on being twitted by a man of rank with his humble origin, told the aristocrat that if *his* origin had been similar, he would have been a blacksmith still. Like him, I feel an honest pride in our having risen in public estimation by efforts to be more and more useful.

Some weeks after the publication of my former address, a clergyman possessed of the *gusto* of an antiquary did me the honour to peruse it, and informed me, that when he studied at Oxford, half a dozen years before, those barbers who dealt with the University men were required to be matriculated members of that ancient University; and that, once in each year, the senior proctor invited them to supper, and, in return for the courtesy, was presented by them with a certain number of pairs of kid gloves. Some of the Colleges of the University—Corpus Christi was mentioned as one—had, under their statutes, a *tonsor* as a regular official. I have since had a

¹ The prescription-book of Dr Butts, his physician, in which many of the prescriptions bear to have been "*devised by the King's Majesty,*" is still extant in MS. in the British Museum.—MS. Sloane, 1047.

communication from a distinguished member of that University, from which it appears that recent legislation has, very much to his regret, altogether done away with these curious traces of the past. Perhaps those who are better acquainted with the history of the older universities of this and of other countries might be able to state many similar usages among them. The barbers' emblems, the ribbon and the pole—the former for tying the arm, the latter to be grasped by the patient during the operation of bleeding—are still displayed in almost every part of Europe, and bear testimony to the universality of the ancient usage, and to the necessity of tracing it to some widely diffused cause which has now ceased to operate. And I have been indebted to the historical researches of my son James for what I conceive to be the true explanation of the phenomenon in question. The monks, as all the world knows, required to have their heads regularly shaved; but it is not by any means so well known that they required to be bled at stated periods. "*Minutus est*" was the form of words descriptive of one who had undergone the operation, the meaning being that he had been *minutus sanguine*—*i. e.*, deprived of blood. I find that in the monastery of St Victoire at Paris there was an order which prescribed such minution to be practised five times in the year, and which was in these terms:—"Prima est Septembri; secunda est ante adventum; tertia est ante quadragesimam; quarta post Pascha; quinta post Pentecosta."¹ The monks, therefore, required to have about them those who could perform both of these operations skilfully; and as they occupied most of the high and lucrative offices, both in the state and in all the professions, they could afford to reward those whose services were necessary to them.

Habits once established in society often survive their causes—an interesting illustration of which will be found in the fact that the Faculty of Physicians and Surgeons of Glasgow, an institution which took its origin thirty-nine years later than the Protestant Reformation, in a city eminently Protestant, contained from the first barber-surgeons. They probably became obsolete there, as here, by the early institution of *single* barbers, who were not permitted to interfere with surgery, and by the voluntary desertion by the surgeons of the inferior occupation, as the higher became more scientific and more important. The only trace of the old connexion in Edinburgh is the payment of a small annual sum to the society of barbers by the surgeons. It is a trace which, on account of old associations, I should be sorry to see done away with.

Edinburgh, the city of John Knox, was pre-eminently the headquarters of the Protestant Reformation in Scotland, and therefore the relations of an old Edinburgh incorporation to that great religious and political movement are naturally a matter of some curiosity. On this subject, the first thing which occurs to me is the fact that our ancestors of this College were all regularly sworn,

¹ Ducange's *Glossarium mediæ et infimæ Latinitatis*, sub voce *Minucre*.

at their entry as members, to "continue in the profession of Christ's blessed evangell as the same is publicly preached within this realm." These words were clearly intended to exclude Roman-catholics from a profession which, in its essential nature, owns no distinction of creed. How far it *did* exclude them is a different matter. There is certainly quite sufficient evidence of the attachment of the mass of our early predecessors to the Reformed Kirk, of which some of them were elders. As one proof of the fact, I may mention a beautiful and very catholic form of prayer, which has probably been in use among us from the very earliest days of Protestantism, and quite certainly from 1581, the date of the commencement of our oldest minute-book. A traditionary belief, which is probably well-founded, has prevailed among us, that it is the composition of John Knox himself. In 1593, a prayer was introduced into the town-council, which contains some of the same identical forms of expression. Our own form is still read at the beginning of all our meetings. It is probable that even the Fellows of the College, to whom it is thus made familiar, may wish to make themselves acquainted with the original edition of it, as it appears in the first page of the book I have alluded to. It is as follows:—

"O eternal God, and our loving and mercifull Father in Christ Jesus, seeing we are convennit heir to treat uponn these things that concernis our calling, we beseik thee, O Lord, to be mercifull to us, and giff us grace to proceid thereintill without malice, grudge, or partialitie;—sua that the things we may do may tend to the glorie of God, the weill of our vocation, and confort of every member of the samen; throw Jesus Christ, our only Lord and Saviour; Amen."

I have told you, in my published address of 1860, that by our earliest charter, dated the 1st July 1505, we were bound to "uphald ane altar in the College Kirk of Sanct Geill in the honour of God and Sanct Mongow our patrone." This was, of course, ill suited to the taste of our zealous Protestants fifty-five years after; and, accordingly, I find that in the allusions made to that charter in the minutes of the entry of new members, and also in the indentures of apprentices, the words "except idolatrie" are generally inserted, in order to qualify its obligations.

Perhaps some of you, who have not looked curiously into the history of the time, may be surprised to be told that these early Protestant and Presbyterian predecessors of ours were far from being so exact as we ourselves are in observing the first day of the week. But it is the indubitable fact that they not unfrequently held meetings of various kinds on that day,—meetings for the admission of new members, for the election of office-bearers, for the collection of money, for calling to account disobedient and refractory members, for making laws,—in short, for business of the most secular description imaginable. For nearly a century after the Reformation, such meetings occurred every now and then, the last

of them, so far as I know, being on 6th March 1653.¹ But you must not suppose that we were in this respect better or worse than our neighbours in those times. Sunday markets were held in the end of the sixteenth century, and were abolished only in 1592; and though public worship was regularly observed, no constraint was then put on individuals or on public bodies in regard to their modes of observing the day. It is difficult for us to imagine the state of opinion on this subject which then existed. The Sunday of the early reformers, selected as it was by the leading men among them for private entertainments;² for marriage-feasts, with dancing, fireworks, and various kinds of merry-making;³ and for public entertainments, such as the festival in honour of the friends of Queen Mary, on 31st August 1561, after her arrival from France,⁴ and the festival in honour of the Danish friends of King James and his queen, on 24th May 1590, after their arrival from Denmark,⁵—the entertainers, in both cases, being the magistrates of this city,—was indeed a very different thing from the Sunday of a century later, which, rigidly enforced by serious penalties, left nothing to the consciences of individuals. And those opposite phases of the day were almost alike dissimilar to the day of rest with which we are ourselves familiar, in which statutory enforcements, being no longer in favour, have been nearly superseded, and seem likely to be superseded altogether, by that sense of its great advantages and privileges which is almost universal among us.

Of the transition, in the course of a century, from extreme hilarity to extreme asceticism, and from extreme freedom to extreme coercion, there are a few traces to be found in the minutes of the Surgeons. In the reign of the first Charles, they were agitated by debates about what is quaintly called in the minutes “barbarizing on the sabbath-day.” At that time the highest men among the surgeons were barbers by right, and a few of them may still have been such in fact, though the barber trade had been then in a great measure transferred to the single barbers, not members of the body,

¹ The days of the week are not named in the minutes, but I have ascertained that the meetings of the dates subjoined were all of them Sunday meetings; others may possibly have escaped me, though I think they cannot be many:—30th June 1588, 26th September 1591, 17th September 1615, 13th September 1629, 4th June 1637, 13th September 1640, 22d September 1644, 13th September 1646, 5th October 1651, 6th March 1653.

² *Inventaires de la Roynne Descosse*, printed for the Bannatyne Club in 1863, preface, p. lxxix., from which it appears that John Knox entertained noblemen and ambassadors on Sunday.

³ Same book, preface, pp. lxxvii. and lxxviii.

⁴ Same book, preface, p. xxxvii. note 1. It was held in the old archiepiscopal palace, which still exists at the corner of the Cowgate and of Blackfriars' Wynd, east side. See also Town-council Records, 26th, 27th, 28th, and 29th August 1561, in vol. iv. pp. 14, 15.

⁵ Town-council Records, 21st May 1590. It was held in the “lugeing” of “Thomas Aitchesoune, master of the cunzie house [the Mint].” Ample provision was made for the hilarity of the occasion, as the minute proves.

but subject to its authority. In 1630, a refractory sabbatarian member, who had "complaint to the kirk and counsell" against the barbers for practising their trade "upon the sabbath-day," was publicly reminded that such tell-tale courses were "contrair to his aith of admissioun." He was nevertheless so audacious as to tell the assembled incorporation that "quha wald, quha wald not, he suld have their libertie restrainit." But he was explicitly told in reply that the barbers of whom he complained had done only what was lawful for them to do, and he was suspended from his privileges "aye and quhill he confes his falt," which he did, and was forgiven.

Five years later, the opinion of the Surgeons was so far changed, that an act was passed by them, on the 27th October 1635, against "barbarizing on sabbath." The practice is characterized as being "absurd and unlawful, contrary to God's Word, and deboishing of servands." A fine was imposed of "fifty-aucht shillings, *toties quoties*." But it is curious that, while thus schooling the barbers, we continued our Sunday meetings, of which I find at least half-a-dozen of a later date than this act. It seems clear to me that such meetings were not then thought to be wrong, for they occurred at a period of great religious zeal and excitement,—the period of the abortive attempt to enforce the liturgy, of the signature of the Covenant, and of the memorable assemblies of Glasgow and Westminster;—and it is obvious that, if our Sunday meetings, which continued till the time of the firm establishment of Cromwell's power, had been thought to be profane, as they certainly would at a later period in the same century, there would not have been wanting rough warnings from such people as Jenny Geddes, the Tron Kirk green-wife, who, on Sunday 23d of July 1637, corrected the theological errors of Archbishop Laud, and of Charles the First, with such heroic intrepidity and with such remarkable success.

You may perhaps feel some interest in the fact that, on the 25th of August 1638, the Surgeons of Edinburgh signed the Covenant, and "ordained their haill prenteisses and servands to subscribe the same als weill as themselves, and that there sall be in no tyme cumming any freeman admittit, either chirurgion or barbour, nor any buike prenteisses or servands, but sic as shall subscribe the Covenant."

In one word, private judgment was a thing not understood or not admitted by our ancestors. But let us not be in hot haste to condemn them. Our most excellent sovereign has as little of the wish as of the power to force on us an unpalatable religion, and to compel us to take up an attitude of self-defence against spiritual aggression. If, after the lapse of much more than two instructive centuries, we discover, on self-examination, that we are in the number of those who do not fully confide in the power of truth and of our own arguments, with a fair field and no favour, to do successful battle against error, and who still rely on penalties,

monopolies, disqualifications, and coercive clauses in old acts of the Scotch parliament, to keep us from going wrong in such matters as those to which the Covenant related, let us, in that case, be silent censors, not of our forefathers, but of our own noble and infallible selves.

The reformation of 1560 was far from being a mere change of religious *opinion*. It consigned Scotland to the guidance of leaders who were earnestly bent on effecting a very necessary improvement in religious *conduct*. The Scotch branch of the Roman-catholic Church, far removed from its ecclesiastical authorities, and therefore less controlled by them, was to a great extent subservient to the purposes of our privileged orders; and its high places were filled by minions of men in authority, to an extent not known in the same Church abroad, and by bastards of royal and noble families, which was in direct contravention of the well-known laws of that Church. Historians, accordingly, are all agreed as to the brutal violence and gross licentiousness of the earlier part of that century. The habits of a people could not be suddenly changed; and there are to be found in our records proofs of the exceeding difficulty of the task; increased, in the case of the Surgeons, by some things in their position and occupation which it may be worth while to explain to you. In those days, we had neither hospitals nor medical schools; and as apprenticeship was the sole means of medical instruction, it was thought necessary that the apprentice should live in family with his master. The correctness of his deportment was on this account a matter of no small importance, and therefore all things connected with apprenticeship were subjects of very strict legislation. It was part of the system both of this and of most other corporations in Scotland, that the sons and the sons-in-law of members were admissible by mere examination, without apprenticeship, and at a low rate of entry-money, which was not the case with strangers. A strong inducement was thus held out to the apprentices to be attentive to the daughters of their masters; and our records show that not a few of them attained to our Fellowship through this very agreeable channel. But as the rose has its thorns, and as the brightest sunshine may be followed by occasional clouds, so the golden opportunities of intimacy with the young ladies in which the young gentlemen rejoiced, were not a little calculated, under certain circumstances, to bring them into unpleasant collisions with their masters. It would appear that sometimes accidents had occurred of a kind not even yet unknown to the *per-fervidum ingenium* of Scotland, though now happily very unusual among the women of the educated classes.

Our predecessors determined to put a check to such irregularities, and assembled for this purpose on one of those Sunday occasions of which I have told you. The meeting was held on 26th September 1591. The conditions of admission to the body were brought under consideration, and it was enacted, that in future the sons-in-

law of members should have no privileges above other intrants in right of their wives, in the case of the latter having been guilty of levity prior to their marriage. The statute is not expressed in quite such drawing-room language as that which I have employed; for our ancestors had an important duty to perform to themselves, to their families, and to the cause of public morals. The evil they had to put down was a serious one, and it was necessary that their legislation should be clear and intelligible. The law itself therefore, and the allusions to it in some of the earlier minutes of entries of sons-in-law, are expressed in terms which remind one of the simplicity and directness of the patriarchal times. I give them all credit for employing the powers they possessed for a purpose so useful and so necessary.

Let me give you another specimen of the lawlessness of those times.

It sometimes happens that a few pregnant words committed to writing at the moment will give us a more perfect photograph of a former state of things than whole pages of laborious and learned disquisition. Such a photograph I lately managed to disinter from our minutes, of a somewhat later but still very ancient period, as if from a Scotch Herculeum, and that with no small difficulty; for the character was very antiquated, and the handwriting very badly executed. It appears that the Surgeons' apprentices had become insufferably turbulent and unmanageable. There was but one possible remedy, that of threatening them with the forfeiture of their privileges, and *that* remedy it was the object of the minute of the 7th May 1612 to apply. It is in the following words:—

“Whilk day the Decone and brethrene under subscryvand beand convenit in the Decone's house, and respecting and considering the insolencie of their servands and prenteisses, how thay ar sa gevin to licentiousness that they will not be correctit, sa that not only in evil speeches but als be way of deid thay will misserve thair maisteris and wilfullie gainstand thair will and correction, therefore it is statut and ordanit that nane of thair prenteisses or servands, prnt or to cum, sall use or weir ony dager, quinzard, or knyff except ane knyff to cut their meit, wanting the point. Under the paine of tinsell of their freedom and liberties of the said craft, and all others privileges and liberties that thair may enjoy throw thair maisters. And that nane of the saids prenteisses or servands miscall or invaid thair maisteris or mastresses in tyme coming under the paine forsaid.”

The careless clerk who penned this minute had little notion that it would be fished up after more than two centuries and a half, to make us acquainted with some of the evils of his day, and with some of those agencies by means of which they have been since eradicated.

War, which is one of the worst of human calamities, has at least the merit of being a great teacher of surgery. During the eighty

years which preceded the civil war of 1640, Scotland was involved in no wars, though there were doubtless plenty of hard knocks going in the High Street which required the occasional appliances of surgery. But the Thirty Years' War on the Continent tempted a number of the surgeons of this place to join the standard of Gustavus Adolphus, and of his daughter after him. Alexander Penicuik and James Borthwick were two of these. They were intimate friends, and both were men of good families and of good fortunes. Of Borthwick I told you some things on the former occasion, and I must now introduce you to his friend, who became a member of the Surgeons some years before him, in 1640. He was the representative of a family which had possessed the estate of Penicuik for a period clearly traceable to the very earliest part of the sixteenth century,¹ and which may have been in possession of it still earlier. He acquired the estate of Romanno, in the county of Peebles, through his mother, whose name was Murray, and who belonged to the family of Philiphaugh, in the adjoining county of Selkirk. He disposed of his family estate of Penicuik in 1647, and bought that of Newhall, on the southern borders of Mid-Lothian, in 1646. He died at Romanno at the age of 90, leaving both his estates to his son, who is known to the world as a poet, a physician, and a naturalist. He was himself also reputed to be a poet, though he has left no literary proof of the fact. He was surgeon to Banner, Queen Christina's general in the Swedish war, and was afterwards surgeon-general to the auxiliary Scotch army in England. His estate of Newhall became afterwards historically memorable as the scene of the celebrated pastoral of our Scottish Theocritus, Allan Ramsay.

The cases of Penicuik and Borthwick are examples of a fact of which I could easily produce abundant evidence, that in the midst of the general poverty of the times, the Surgeons were not *relatively* poor. On the contrary, I have good reason to believe that both in wealth, and rank, and enterprise, they held as high, perhaps even a higher, place among the men of their own times, than the medical men of the present day among the men of the present generation.² It is also certain that our municipal institutions in Scotland, in

¹ He or his father (but probably himself at an early age) is entered four times, viz., to his father, grandfather, great-grandfather, and great-great-grandfather, as the heir of "Pennycuke."—*Inquisitiones Generales*, Nos. 493, 494, 495, 496. The four entries bear the same date, Sept. 21, 1610, and the four ancestors all bore the same name, John Pennycuke, *de eodem*.

² From the records of Inquisitions regarding the possession of property in Scotland and other sources of information, I can prove that, of the first 150 members of the Incorporation of Surgeons, at least twenty, if not more, were possessed of landed property. A great many more held property in houses, chiefly in Edinburgh; six at least were nearly allied by blood or marriage to the families of the nobility; three were members of the Parliament; and six were surgeons to the Scotch kings. As to enterprise, the facts stated in the text, taking into account the difficulties they had to struggle against from the civil disturbances of the seventeenth century, are highly to their honour.

former times, held a far more important relation than they now do to our national interests. Constituted for mutual security, in an unsettled country, they were very great instruments of civilisation and of progress, and almost the only avenues to the acquisition of wealth. In them useful reforms originated; in them such men as John Knox, the intrepid assertors of human rights, found the necessary sympathy and support; nor was it till the final extinction of the last hopes of the Stuarts, and the consequent establishment of a firm government, with impartial administration of the laws, and a general feeling of security, that many of those functions which they once performed so usefully to our profession were felt to be no longer necessary.

It would require a much better artist than I am to present you with a correct portrait of the Edinburgh physician of the early part of the sixteenth century. I find from Lindsay of Pitcottie's *Chronicles of Scotland*¹ that "King James the Feird was weill learned in the airt of medicine, and was ane singular guid chirurgiane; and their was none of that profession, if they had any dangerous cure in hand, but would have craved his adwyse."

From this it appears that James had physicians about him,—an inference which is confirmed by a passage in a poem by Dunbar, addressed to the same king, in which the following words occur:—

"Sir, ye have mony servitours,
And officers of divers cures;
Kirkmen, courtmen, craftsmen fine,
Doctors in Jure and Medicine."

The early dawn, therefore, of medicine and of surgery in Edinburgh was rosy-fingered to this extent, that it "began to peep" before the admiring eyes of our citizens at the royal palace of Holyrood. The doctors must have received their honours abroad, for I can discover no clear evidence that degrees in medicine were then conferred in Scotland,² and, if any there were, they must have been

¹ Edinburgh edition, 1814, p. 249.

² The University of Aberdeen had professors of medicine from 1505, who were probably graduates of some university. The third of these, Gilbert Skene (1556), does not seem to have been abroad, and therefore probably was a graduate of Aberdeen. He published a tract, "De peste" (1568), afterwards went to Edinburgh (1575), and was appointed doctor of medicine to the king (16th June 1581)—[See Kennedy's *Annals of Aberdeen*, vol. ii. pp. 368, 403, 435; also Orem's *Description of Old Aberdeen in the Years 1724–25*, p. 272; *Fasti Aberdonenses* (published by the Spalding Club), p. 274; and *Tracts by Gilbert Skene* (published by the Bannatyne Club), preface, pp. vii. to x.]. But it does not appear to me that there was any considerable number of Aberdeen graduates in the sixteenth century, or even in the seventeenth. Of Glasgow University the same thing may be said. On 6th November 1712, there is a minute to the effect that "the faculty, considering that the professions of law and medicine have of a long time been neglected, and that the royal visitation in the year 1664 did find that the said professions ought to be revived," agreed

exceedingly few indeed. It was, perhaps, not amiss that they consulted their very accomplished king in their difficulties; for though, like his brother-in-law, King Henry of England, he came to his knowledge of medicine by some royal road, which, like the right divine to govern wrong, is now obsolete, yet I am by no means sure that *his* medical advice was not better than theirs. For the physician of those early days paid little attention to the phenomena of disease in comparison with what he bestowed on the dicta of the Greek authorities. In his own conception, he was the priest of Apollo, who interpreted to the vulgar those ancient Delphic oracles regarding the ills that flesh is heir to. He may be said, almost without a metaphor, to have been among the number of those who

"think to climb Parnassus
By dint o' Greek."

Besides all this, he was given to superstition, to astrology, and to divination; while it is quite possible that the king might be more practical in his methods. In the case of that most afflicting disorder, the toothach, he proceeded in a very practical way, without consulting either Hippocrates or Avicenna, or any other authority, Greek or Arabian; for, in the lists of the expenditure of the lord

that they should be revived. Accordingly, Dr John Johnstoun was made professor of medicine (1st June 1714); and, some years after (29th September 1720), a Mr Andrew Grahame was made doctor in absence—[See the *Institutes of the University of Glasgow*, vol. ii., printed by the Maitland Club]. In St Andrews, the celebrated Dr John Arbuthnot appears to be the first doctor in physic created (11th September 1696). He was subjected to a trial before a board of physicians. From the tenor of the minute, it appears that the conferring of medical degrees was then a new thing, and no more were conferred for six years after. Up to the reign of George II., the doctors created there do not average more than one annually. During his reign they average three, and they were much more numerous afterwards. In Edinburgh University, the first M.D. was David Cockburn, A.M., who graduated on 14th May 1705. There were fifteen graduates in Medicine prior to 1726, the date of the creation of a medical faculty in the University. In some cases the degree was conferred *ad eundem*, in some by recommendation, and in absence, but in the greater number by examinations, which were conducted by the Royal College of Physicians—[See Dalzell's *History of the University*, vol. ii. pp. 293, 308, 312, 319, 325, 326, 327, 329, and 330]. The earliest doctors in Medicine who entered the Faculty of Physicians and Surgeons of Glasgow were two who were admitted in January 1645. The first doctor in Medicine who entered the Incorporation of Surgeons of Edinburgh, Christopher Irvine, was admitted 28th December 1658. He is first termed *Mr.*,—a prefix which, in those times, indicated that he was Master of Arts, and which is invariably applied to him till 16th February 1669, when he is first called Doctor, and he therefore must have got his doctor's degree just before that date. Dr James Nisbet was the only other Doctor who entered with the Surgeons in the seventeenth century, but there were several graduates in Arts. [For the information and references contained in this note,—as to Aberdeen, I am indebted to Professor Struthers; as to Glasgow, to Professor Weir, and to Mr Weir, Secretary to the Faculty of Physicians and Surgeons; and as to St Andrews, by much the oldest of our universities, to Dr Oswald H. Bell, Professor of Medicine there.]

high treasurer, of date February 9, 1511–12, there is an entry of a payment in the following terms:—"Item to ane fallow, because the king pullit furth his twtcht, xiiii s;,"¹ and I presume that the sum paid was for his majesty's professional education, which was therefore conducted on sound, practical, common-sense principles.

There are many indications that our Scotch physicians were in little repute among us for more than a century after James IV. Foreign physicians were generally preferred. John Hamilton, Archbishop of St Andrews, a man allied by blood to the royal family of Scotland, engaged in his service in 1547 a young French physician, whose name was Casanate; and, five years later, his health being still very bad, brought from Italy, at the suggestion of Casanate, the celebrated Cardan, whose name is now better known in algebra than in medicine, but who seems to have effected his cure.² Few Scotchmen could then have afforded the expense; but Hamilton was wealthy, and was also, politically, the most powerful man in Scotland. During the few weeks of his stay among us, Cardan was consulted by many distinguished Scotchmen. His ideas on Hamilton's case, on physiology, on dreams, on nativities, and on horoscopes, are subjects to which, curious and interesting as they are, I can here only allude. I find that, about the same time (20th March 1547), a letter was addressed by the Scotch regent to Edward VI. of England, requesting letters of safe-conduct in favour of Archibald Betoun (not improbably a relative of the cardinal, who had been murdered the year before), to enable him to travel through England to France, "for counsel and help of medicinars."³ Queen Mary Stuart had a French physician, according to what appears to have been the usage of the day among those who could afford one.⁴ There is extant a letter from a M. Cognain, dated 23d April 1586, and addressed to M. De Courcelles, French ambassador to Scotland, in which the writer congratulates him on the recovery of his health, and sends him some rhubarb, some senna, and some aloes, with directions how to mix them.⁵

As time rolled on, the enterprising spirit of our countrymen impelled them to seek those opportunities of instruction, and those academical distinctions, which the schools of the Continent afforded, in order that they might no longer be superseded by foreigners. Accordingly, I find that, in the reign of James VI., both the physicians and the surgeons of the court were natives of Scotland.⁶

¹ Pitcairn's Criminal Trials, vol. i. p. 124.

² Morley's Life of Jerome Cardan.

³ Thorpe's Calendar of State Papers relating to Scotland, p. 62.

⁴ Froude's History of England, vol. viii. p. 251.

⁵ Thorpe, etc., p. 515.

⁶ Gilbert Skeyne was appointed in 1581 to be his physician, and lived in Niddry Street. Gilbert Primrois, and, at later dates, James Hervey, John Naysmith, and Archibald Hay, were his surgeons. See the Inquisitions regarding property in Scotland (for Edinburghshire, 347), also the Minutes of the Surgeons of the entries of these four members; and, as to Nasmyth, the nar-

But the poverty of Scotland in the sixteenth and seventeenth centuries, and the want of strength in the government to protect the subject, were formidable impediments to the progress of the healing art. It may be easily conceived how very inadequate was its remuneration, when it is considered that King James was often at a loss for money to carry on what he very characteristically called his "king-craft." Our craft requires learning, leisure, and an expensive training. The advantages of a medical school could not be had at home; and though such things existed abroad, they were in a very unsatisfactory condition. Sylvius, the professor of anatomy at Paris prior to the middle of the sixteenth century, who has left his name impressed, as all medical men know, on a part of the cerebral structure, was well acquainted with human anatomy as far as then known, but is said to have taught anatomy from the dissection of the inferior animals.¹ All were alike ignorant, till long after, of the course of the circulating fluid, the knowledge of which was so vitally necessary to scientific progress.

The self-conceit of the physicians of those days took a dangerous direction, for they thought themselves the proper persons to govern the untitled members of the profession, and were therefore more likely to be acceptable to the Richelieus abroad, and to the Jameses and Charleses at home, who thought the "order observed in foreign nations in the like cases" to be "*convenient* and comely,"² than to the surgeons of Edinburgh, who had no particular reverence for their sacerdotal character. The abuses in the granting of degrees added to the quarrel. A physician of the old school, writing in 1658,³ tells us that ignorant men, who knew nothing of Hippocrates or of Galen, were admitted to degrees on the mere strength of their facility in speaking Latin,—that degrees were sold, and that, from these causes, those of the Universities of France and of Italy were little valued. He adds, that in London, Bordeaux, and Montpellier, degrees were not accepted without re-examination, and that the most learned physicians submitted willingly to this as a necessary check on a gross abuse.

In the year of James the Sixth's visit to Scotland (1617), a few physicians then resident in Edinburgh endeavoured to persuade him to erect a College of Physicians. The scheme was brought forward in 1621, and was unsuccessful. A second attempt was made in 1633, when Charles I. came to Scotland, and was also defeated. In the former of these projects *seven* physicians, and in the latter *nine*, were to have constituted a college, with power to fill up all rative given by King James of the Gowrie Conspiracy of 1600, in Peacock's Perth and its Annals and Archives,—Perth, 1849,—p. 213.

¹ Morley's Life of Cardan, vol. ii. p. 100. The same practice prevailed in the University of Aberdeen when Dr W. Gordon was professor there—*i.e.*, prior to 1636—[See Chambers' Domestic Annals of Scotland, vol. ii. p. 96].

² "Report on the Examination of Medical Practitioners, etc.," 1833,—Printed by the Royal College of Physicians, page 2.

³ Jacobus Primerosius; "De Vulgi erroribus in Medicina."

gaps in their own number, and to regulate all the medical, surgical, and pharmaceutical interests of Scotland. The obvious absurdity of those projects was probably the principal cause of their failure. A private letter of 1633, communicated to me by Mr Fraser, gives an account of proceedings in the Scotch Parliament in the following terms:—"The phisicians craivit to have a College erectit, and that none wer approvyn without their approbatioun, and no stranger to give phisik without their approbatioun; efter long dispuitt, refusit to be ane article." A similar project in Cromwell's time was described in my address of 1860; but I was not then aware of the depths of degradation which the Surgeons escaped by its failure in 1657. It appears that besides their hostility, it roused that of the Faculty of Physicians and Surgeons of Glasgow, of the universities, and more particularly of the University of Aberdeen; and that a conference was held by its projectors at Dundee, with some representatives of that northern Seminary. At this meeting various matters deeply affecting the Surgeons were very harmoniously arranged *in their absence*. It was the determination of those high contracting parties that the Surgeons should in future be limited to cutaneous and external diseases, "so long as these remained simply such, and did not recur;" if they did recur, "the assistance of one of the College or their licentiates" was to be called for; they were to "have liberty to cure *lues venerea*," but not "to put hand to women in dangerous labours of childbed, nor use instruments for the drawing forth of births, without the advice of the physicians aforesaid, except in absolute necessity of time and place where physicians cannot be had." The surgeons were to be allowed, in certain cases, to practise venesection; and, "in cases of necessity, where the distance of place will not admit the present help of a physician," it was to be "leisome" to them "to administer a clyster till a physician may be had."¹ It is not wonderful that, to use the words of a contemporary private letter, the surgeons made "a buzzing and a stour;" for they were "not wood," they were "not stones, but men,"² and the project was for them nothing short of annihilation as a body, and subjection, as individuals, to the caprices of a pragmatic and irresponsible despotism. We, the graduates of modern times, have learned to be less vain of our doctor's cap, as well as of our Greek,—with which latter, I grieve to say, there are among us some who dispense altogether, and who contrive to do with such a modicum of Latin as would have horrified King James and the doctors of his and of Cromwell's day.

It is agreeable to turn from those degrading conspiracies to the

¹ "Report on the Examination of Medical Practitioners," already quoted, pp. 18, 19. The structure of the sentence seems to imply that if the "present help of a physician" could be had, this office, was not to have been 'leisome' to the surgeon.

² Julius Cæsar.

event of a quarter of a century later, the establishment of our Royal College of Physicians on far more rational principles. Sir Robert Sibbald, its principal founder, had profited by the errors and failures of the preceding attempts.¹ But it was not to be expected, after what I have told you, that his object could be effected without raising jealousies in certain quarters.

Graduates, both in Arts and in Medicine, had, in the interval, begun to enrol themselves in the ranks of the Surgeons. One of these was Dr Christopher Irvine, who, being an author, which few then were, is perhaps worthy of a brief notice. * This gentleman tells us that he was turned out of "a plentiful patrimony in Ireland by the troubles in that kingdom," and also "out of the College [University] of Edinburgh, by the Covenant," and that he was imprisoned, and obliged for his subsistence to teach grammar. By the favour of James the Seventh, he was compensated for these losses, by the office of historiographer for Scotland, and also by that of first physician to his Majesty. In 1656, he published his "*Medicina Magnetica*;" a very different thing from what its title would suggest to us. It is dedicated to General Monk, and contains one hundred aphorisms, not one of which can possibly be admitted, twelve conclusions equally inadmissible, and a hopeful application of both of these to his method of cure by what he calls "magical physic." His sense of the value of his own labours is thus expressed in an address to the reader,² "If thou be candid, I am glad to serve thee, and am confident in these books thou shalt find things both rare and delectable. But if thy nature or principle make thee froward, injoy thyself, and provide such kick-shaws as will fit thy pallet, for Christy hath served up this dish only for his own fancy and his friends' recreation." He sought immortality by two other *mortal* publications, not medical, which establish his claim to a considerable amount of scholarship, with no small share of eccentricity. He was very jealous of the erection of the Royal College of Physicians, and applied to the Privy Council, setting forth his education, his degrees, his army commissions, and his services, as reasons why they should not suffer him "to be stated under the partial humours or affronts of the new College, composed of men altogether his juniors (save Dr Hay) in the studies of philosophie and practice of physick." This was granted by the Council, and was afterwards confirmed, in 1685, by an Act of the Scotch Parliament.³ Christopher, who, in the title page of one of his publications designates himself "*abs Bon Bosco*," was the pro-

¹ Sir Robert, writing of the attempt of 1657, ascribes it to Dr George Purves, whom he characterizes as a man of great parts, and of much boldness and vivacity of spirit; and who was of a "pragmatic temper, and did not spare charges for to accomplish the design." See "Report on the Examination of Medical Practitioners," p. 8.

² P. 96.

³ See the Acts of the Parliament of that date.

prietor of the estate of *Bonshaw*. It was probably not without good reason that he was superseded in his offices by the government of King William, for the restoration government had many favourites whose zeal in its favour was their chief merit, and I believe Christopher to have been one of them.

There is a minute of the Surgeons on 7th April 1688, some months before the Revolution, which, as it shows the working in this city of the intrigues of James the Seventh, may be worthy of a short mention. That most unprincipled and heartless monarch, whose boots and thumbikins had been applied to the agonized limbs of Scotch Presbyterians in his own Royal presence only nine years before, having failed in his attempts to combine the Churches of England and Rome against the Presbyterians, was now desirous to procure the assistance of the Presbyterians against the Church of England; and for this purpose had proclaimed, only three days before, and that in direct opposition to Acts of the Parliament, his resolution to tolerate by his Royal prerogative the worship of Roman-catholics and of Presbyterians, and of all others. In these circumstances, Robert Cheislie and Robert Halyburton, merchants in Edinburgh, applied to the Surgeons in behalf of the "Colledge and Tron Kirk parishes," for the use of "the old house belonging to the said calling that is now ruinous," which, "if the samyn were rebuilt," might serve them as a place of worship. In the petition it is amusing to read that "the Kingis most excellent Majesty, by his several declarations and proclamations, has been graciously pleased to allow unto them full libertie to meet and serve God in their own way," with much more to the same effect. It was well for Mr Cheislie and his friend that recent facts, and especially the boots and thumbikins of Holyrood, and the doings of King James' particular friend, Judge Jeffreys, at the bloody assize, though forgotten by them, were remembered by many both in Scotland and in England.

Those who have read my account of the history of this College may remember Alexander Menteith, a member of ours, distinguished as a teacher of anatomy as early as 1694, and of chemistry as early as 1697,¹ the leading surgeon, moreover, of his day, and who may justly be regarded as distinguished among those who prepared, if they did not actually lay the foundations of our medical school. A few things which I have since discovered regarding him will no doubt be acceptable to you. I may remind you that he was deprived of his office—that of representing the Surgeons in our municipal council—by a strong act of the Government, which I then assigned my reasons for suspecting to have arisen from his being too keen a partisan of the Stuarts to be safe for King William. In confirma-

¹ His lease of the chemical laboratory at the Surgeons' Hall is dated 16th April 1697.

tion of this theory of mine, I find that he was son of James Menteith¹ of Auldcathie, the representative of the second or Stuart line of Earls of Menteith, who were staunch friends of the old royal family of Scotland, and that his elder brother James married the heiress of Binns, granddaughter to General Dalryell of Bothwell Bridge celebrity. I have further to say, that he bought, in 1707, the estate of Todshaugh, now Foxhall, in Linlithgowshire, which he disposed, four years after, to his eldest daughter Elizabeth, and to her husband John Carre, Advocate; and that his lincal descendants in the fifth generation are Mr Walter Riddell Carre of Cavers Carre's family. Menteith's estate of Todshaugh seems to have some elective attraction for medical families, for it is now the property of Colonel Duncan, grandson of Dr Andrew Duncan, senior, Professor of Theory of Physic in the University. Menteith died 23d December 1713, a few weeks after his friend Dr Pitcairn.

Having yet some things to tell you of the early days of our medical school, I am under the necessity of reminding you that its birth was in the old hall of this College in 1697; that anatomy and chemistry were taught in that hall from the first, the former by members of our body called "operators;" that we were bound by our engagement with the Town-council, who gave us facilities for procuring subjects, to give a public anatomical demonstration every year; that in 1705 we appointed our first professor of anatomy; that, some time after, he received £15 a-year from the University funds, which salary was continued to his successors; and that the medical school was completed after 1720, by the assistance of some energetic Fellows of the Royal College of Physicians, and, thus completed, was transferred to the University from our buildings in 1726. There is a very interesting minute of the Surgeons, dated 18th May 1704, which shows in what an earnest spirit our bargain with the Town-council was carried out at that early date. It is a vote of thanks to the "operators" who had conducted a course of public demonstrations in the previous April. The names and subjects are thus enumerated:—"The first day, James Hamilton—a discourse on anatomie in generall, with a dissection and demonstration of the common teguments and muscles of the abdomen. The second day, John Mirrie—the umbilicus, omentum, peritoncum, stomach, pancreas, intestines, vasa lactea, mesentery, receptaculum chyli, and ductus thoracicus. The third day, Mr² Alexander Nisbet—the liver, vesica fellis, with their vessels, spleen, kidneys, glandulæ renales, ureters, and bladder. The fourth day, George Dundas—the organs of generation in a woman, with a discourse of hernia. The fifth day, Robert Swintoun—the containing and con-

¹ The Auldcathie Menteiths were descended from a son of Alexander, Earl of Menteith, through Sir William Menteith of Kerse, and his son Alexander Lochend.

² The prefix *Mr* is uniformly applied to this gentleman. See note to p. 692.

tained parts of the thorax, with the circulation of the blood and respiration. The sixth day, Henry Hamilton—the hair, teguments, dura and pia mater, cerebrum, cerebellum, medulla oblongata, and nerves within the head. The seventh day, Robert Eliot—the five external senses, with a demonstration of their several organs. The eighth day, John Jossy—the muscles of the neck and arm, with a discourse on muscular motion. The ninth day, Walter Potter—the muscles of the back, thigh, and leg. The epilogue or conclusion by Dr Archibald Pitcairn.¹

You will please to observe that these doings preceded the appointment of Eliot, one of the “operators” named, to be the first professor of anatomy in Edinburgh. By him and his three immediate successors the business of anatomical instruction was conducted during a long period of civil commotion and danger, arising from plots got up in foreign countries in favour of the Stuarts. Every friend to our dearly bought liberties felt that he might again have to fight for them. The thunders of Sheriffmuir had scarcely ceased to wake the echoes of the neighbouring Ochills, when fresh conspiracies of Spain and its minister, Alberoni, excited our alarms. A descent was made in the West Highlands in 1719, and another plot was discovered in 1722, for which Bishop Atterbury was attainted. The Edinburgh friends of the Revolution settlement clung to the ancient constitution of the city, and even to its ancient defences, the North Loch, and the Flodden wall, and felt that, with all their defects, they might be useful rallying points in a season of danger.

The second Alexander Monro, in a memoir of his father, written in 1781, in the midst of a country long enjoying the blessings of peace and of a settled government, ignores altogether the difference of the times. The municipal government of Edinburgh had by that time ceased to have so important a relation to our medical and other interests. He tells us that on his father's return to Edinburgh, Messrs Drummond and M'Gill, who were the conjunct *nominal* professors and demonstrators of anatomy to the *Surgeons' Company*, offering to resign in his favour, *he found himself under the necessity of entering a member with them.*²

Now there are three errors in this account, for,—1st, Drummond and M'Gill were not “*nominal* professors,” but as real professors as his father or himself, though not, like them, *ad vitam*; 2d, “The *Surgeons' Company*” never was the designation of the body of which he speaks; and, 3d, his father was under no other “necessity of entering a member” with the Surgeons than he himself was of entering the University; the necessity, as his father—a very zealous and useful member of ours—would, I am sure, have readily

¹ Portraits of all these gentlemen were exhibited, with the exception of Eliot, of whom, unfortunately, there is no picture.

² The italics are mine.—J. G.

admitted, being that of doing the very best thing to promote his own interest; for he got the only anatomical theatre in Edinburgh for his prelections, and he got as his pupils the apprentices of the Surgeons, the proprietors of that theatre.¹ But the explanation of these disparaging expressions is intelligible enough. About four years before this memoir was written, the Surgeons were desirous to have surgery taught in the University by a separate professor, and their memorial to the Crown for that purpose was defeated by the second Alexander Monro, who had also influence enough with the patrons of the University to get a new commission issued to himself, making him professor of surgery as well as of anatomy;² and for more than half a century thereafter surgery was taught as a mere appendage to the University course of anatomy.

The professors belonging to the Royal College of Physicians to whom I have alluded as having taught at the school in the Surgeons' Hall between 1720 and 1726, were Doctors Andrew Sinclair and John Rutherford, professors of the theory and practice of medicine, and Doctors Andrew Plummer and John Innes, professors of medicine and chemistry. On the 9th February 1726, these very eminent physicians applied to the Town-council to be appointed professors in the University on the same footing on which their colleague Monro had been appointed several years before, but without salaries. Their petition was granted. The medical school, which has been of so much advantage to this city, was thus completed by the almost unaided labours of the physicians and surgeons of Edinburgh. A prodigious boon was conferred by them on this city and its University; and yet there exists in the very minute of the appointment of these four professors a curious proof that, in some jealous quarter or other, the value of the boon was little understood or appreciated. For it was provided that Sinclair and Plummer should have the privilege "to deliberate and vote with the other professors in their college affairs till 1st March 1727," and that Rutherford and Innes should enjoy the same privilege for the succeeding year, and so on alternately. Who the authors of this stipulation were, I

¹ I have felt constrained to rectify these errors, because they are injurious to the fair fame of those who founded our medical school, and because they have been copied into almost all the biographies of the first Alexander Monro which are to be found in Encyclopedias and similar works.

² Minutes of the Town-council of 16th July and 6th August 1777. He stated to the patrons that, though it was not expressed in his commission, "the teaching of surgery has been universally understood to belong to his office," which was constituted "on the plan of the then most celebrated University of Leyden." His application was supported by the principal and the medical professors, and his appointment as professor of surgery was protested against by Alexander Hamilton, the chairman of the Surgeons, on the ground, *inter alia*, that "as the surgeon must be formed by witnessing the practice in the living body, the professor could not give the rudiments of the art of surgery." ¹

cannot tell, nor is it worth while to inquire. It is quite enough to know that the labours of the medical men, like those of other benefactors of mankind, were not understood, and not duly valued by their contemporaries.¹

I have now to bring to a close this address, which I fear has extended to too great a length, though I have suppressed many smaller things for fear of tiring out your patience. It seems to me to be good occasionally to unroll the pages of the past, and to endeavour to discover the successive steps by which the existing state of things has been brought about. Though sufficiently conscious that my task could have been much better performed by one more familiar with historical and antiquarian research, yet I confess to some share of enthusiasm in my subject, and have much more sympathy with a Monkbarns who finds traces of Agricola's camp in "a wee-bit bourock," than with that worldly-minded absorption of the whole soul in the din and strife of the passing moment, which leaves no room for a thought on the lessons of the past or on the prospects of the future; no gratitude for the blessings of an advanced civilisation conferred on us through the labours of successive generations, and no desire to leave this world to others better than we found it. Were such apathy universal, it would furnish an excellent argument to those great antiquaries, who, with astounding humility, have been endeavouring to trace the parentage of the lords of the creation to the chimpanzee and the gorilla.

ARTICLE II.—*Naval Medical Contributions.* No. IV. By ALEX. E. MACKAY, M.D., R.N.; F.R.S.E., M.R.C.P. Eng., etc., etc.

Erysipelas.

THE increased accommodation afforded by the present system of shipbuilding,—the greater attention which has of late years been paid to the ventilation of ships,—and the conviction which has forced itself upon commanding officers, as the result of long experience and repeated representation, that the utmost possible dryness of the decks, and especially of the orlop decks of ships of the line and the lower decks of frigates, is essential to the preservation of the health of a ship's company,—have all exerted their beneficial influence in diminishing disease among seamen, and especially in removing the risks of their prevailing in the epidemic form which they were wont to do in bygone times. In proportion to the rareness of such visitations, however, must be the anxiety of the medical officer in whose ship they may occur, to trace them to their origin; to ascertain their cause; and, as far as in him lies, to take such steps as shall confine their operation within the narrowest possible limits.

¹ This absurd restriction was removed by the patrons by an Act of 26th February 1729, on the petition of the four professors.

Amongst the "vexed questions" of medicine, the doctrine of contagion in reference to certain diseases has ever held a prominent position. Whatever views may be entertained by medical men in the earlier part of their professional career upon this subject, and however much the tendency may be to scout contagionist doctrines,—too often with a degree of disdain such as rarely springs from deep thought or earnest inquiry,—it is curious to observe how the experience of years brings with it greater caution, and a felt necessity for acting upon the supposition of the possibly contagious character of many diseases which had been previously held to be incommunicable in this way. In the whole range of the profession there is perhaps no position in which a man's mere opinion upon any given subject may exert so much influence for good or evil, as that of a surgeon of a ship of war, upon the contagious or non-contagious character of a disease. Placed in a position where, in the vast majority of instances, his word on all matters affecting the health of the ship's company under his charge is law, and having at his disposal every facility for carrying out any views he may entertain as to the propriety or not of retaining a sick man on board his ship, it comes to be a matter of vast importance to the ship's company that his opinion should be founded on some more certain grounds than those of mere conjecture. Until that experience has been acquired, which years of constant observation alone can bring, it will be evident to the most unreflecting that every doubt should be given in favour of the ship's company, and that a case of disease about which there is the smallest question as to its communicability by contagion, should be removed from the ship at the very earliest opportunity. Should such a disease make its appearance when the ship is at sea, or under circumstances where it is impossible to land the patient, the precautions taken to avoid any risk to the ship's company should be as complete as if the disease were admitted on all sides to be eminently contagious.

Amongst the diseases about which there would appear to be no doubt as to their essentially contagious qualities, the one which forms the subject of this contribution holds not only a very decided but a somewhat peculiar position. There can be no question that erysipelas is a disease to which some people are so prone that it becomes in them a peculiarity of constitution,—a diathesis, in fact. As a contagious disease it is in this respect not only singular, but it possesses, to the naval medical officer, the additional interest that it confers upon the unfortunate individual afflicted with the diathesis, the capability of propagating amongst those around him, by contagion, a disease which may at any moment be developed spontaneously in himself. It is to the naval medical officer especially that this is of very great interest, for there is perhaps no condition in life in which men are so closely packed together, and in which the isolation of the sick from the healthy is at the best so imperfect, as on board a ship of war. It is impossible, of course, without previous

knowledge, to predicate of any man that he possesses this diathesis; but the circumstance of his having more than one attack of the disease during the commission of a ship may be accepted as a proof of his being constitutionally predisposed to it, and it will then remain for the medical officer to judge whether his retention in the service is desirable or not.

From the 7th of October 1862 until the end of May of the past year, when I gave up medical charge of H.M.S. Marlborough, a succession of cases of erysipelas presented themselves on board, which caused me much anxiety. The intervals between the cases of pure erysipelas were so filled up with cases of erythema, and latterly with cases of a somewhat peculiar form of cyanche, that the chain of disease was kept tolerably complete throughout. In the attempt to ascertain the cause of these affections, my attention was of course drawn, in the first place, to the condition of the ship itself. The fact that erysipelas, erythema, and other allied affections prevail to a greater extent where there is much humidity, defective ventilation, and want of cleanliness, than under other circumstances, led naturally to a thorough examination of the ship, with the view to ascertain whether in so large a structure there might not be some of those conditions which would tend to render her what is ordinarily called unhealthy. This examination was undertaken by me more for the purpose of excluding all possible doubt upon this particular on the part of others, than from any question on the point in my own mind. With a very considerable experience of the internal economy of ships of the line, I feel bound to say that, in point of ventilation and in all the details of discipline, order, and cleanliness, I have never seen any ship so perfect as the Marlborough was, and it would be impossible to surpass the constant regard exhibited by the executive of the ship to all those measures most calculated to maintain a high sanitary condition on board. To obviate all doubt, however, in company with the senior lieutenant, Mr Gillett, I made a most searching examination in every direction. The well, the bilges, the limbers, the holds, the spirit-room, and the parts under the engine-room plates, were all most carefully looked into, and, as I had fully anticipated, nothing could possibly be cleaner, drier, or "sweeter," than the ship proved to be in every part. The idea, then, of any such local centre of disease being thus precluded, there were certain other sources to which it was possible we might trace the frequency of these seizures, and to a combination of these they might, I think, with all propriety be referred. These were, marked proclivity to the disease on the part of some of those affected, certain atmospheric conditions, and contagion.

Before entering upon the narrative of this succession of cases, I may remark, that I have applied the term erythema to cases of circumscribed superficial inflammation of very limited extent, and unaccompanied with constitutional symptoms of any severity. There

was usually, however, more or less pain in the part, and in one or two instances a small collection of matter formed. Of the nine cases of this affection under treatment, 1 was only one day on the sick-list; 2, two days; 1, three days; 3, four days; 1, six days; and 1, thirteen days. In the latter case, however, the man was a miserably cachectic subject, having been a great sufferer from secondary syphilis, and his long stay on the list arose more from his general debility than from the local affection. The cases of erysipelas were exceedingly well marked, and in the majority of the cases, where the disease affected the lower extremities, the inflammation was very extensive, and the glands in the groin were implicated. The constitutional symptoms in all the erysipelatous cases ran very high, and in one or two instances the premonitory fever was so characteristic as to allow of an accurate diagnosis being made even previous to the development of the specific local inflammation.

The first case of erysipelas, the one from which all the other seizures start, occurred at Corfu, in the person of Matthew Sheridan, æt. 27, A. B., who was placed on the sick-list on the 7th October 1862, with a simple local inflammatory affection, terminating in an abscess in the leg. When the erysipelatous inflammation set in we were under weigh for Athens, so that it was impossible to land him. That this man was constitutionally prone to the disease was evidenced by the fact, that twice previously during his career in the ship he had been under treatment for erythema, and that subsequently to the seizure of which I am now speaking, he had another on the 14th of April of the past year. It being necessary to treat him on board, he was isolated very carefully from the ship's company, and not allowed to sleep amongst the rest of the men until long after he was perfectly well. He was discharged to duty on the 18th of November. No other case of erysipelas or erythema occurred during this interval. On the 23d of November, a case of erythema was placed on the sick-list, and discharged to duty on the 29th. On the 11th of December, George Symers, æt. 24, A. B., presented himself with a small abscess on the sole of the foot, which was freely incised, and exit given to a small quantity of pus. Inflammation of the lymphatics subsequently set in; and on the 17th, the day on which we went out cruising, erysipelas attacked the foot and leg, and almost immediately went on to vesication. We were not able to get this man removed to hospital until the 20th. On the 26th of December, Wm. Neais, æt. 23, A. B., an inveterate subject of erysipelas, this being his third attack in the ship, and the tenth, according to his own statement, within the last five years, had a seizure following on the indigestion consequent upon a Christmas day's excesses. He was discharged to hospital on the same day. The next case occurred on the 24th of January, in the person of Wm. Palmer, æt. 52, a leading seaman. The attack commenced during the middle-watch,

when he was seized with nausea and vomiting. On his presenting himself in the morning he had a peculiar, heavy, depressed appearance. He was trembling, and he stated that he had had rigors. There was severe frontal headache—the bowels had been somewhat relaxed—the skin was hot—the pulse accelerated—and there was anorexia, and much thirst. The tongue was clean. He was ordered to bed, an emetic was administered, and a saline diaphoretic mixture was directed to be taken during the day.

In the evening report it is stated that there was much febrile reaction, and that he had had a recurrence of rigors. It is also noted, “no appearance as yet of erysipelas, but the symptoms point in that way.” He was ordered to continue the diaphoretic mixture, and chlorate of potass was added to his barley-water drink. At 8 P.M. that evening, a faint erysipelatous blush was observed commencing on the right leg, with a little swelling. The diaphoretic was stopped; he was ordered twenty-minim doses of the tincture of the sesquichloride of iron every two hours, and a warm acetate-of-lead-and-opium lotion was applied to the leg. On the following morning he was discharged to hospital. Exactly one month afterwards, Wm. Neais, the patient above mentioned, who had in the meanwhile returned to us from hospital cured, was again seized with erysipelas. In this case the seizure took place at 4 P.M. of the 23d February, when he complained of symptoms which he said he knew were the forerunners of an erysipelatous attack; but the only trace of any local irritation was slight redness and tenderness over the inguinal glands. On the following morning, with subsidence to a great degree of the general febrile symptoms, there was an erysipelatous blush, extending from the dorsum of the foot to the groin. He was at once discharged to hospital. With the exception of the first case, all these seizures occurred at Malta. It is to be observed, however, that between the cases of the man Palmer and the man Neais, two cases of erythema presented themselves. They were both of a very mild character. On the 17th of March we left Malta, and after a pleasant smooth-water passage, arrived at Corfu on the 21st. Between the case of the man Neais and our arrival at Corfu, a rather more lengthened case of erythema was under treatment. The man was placed on the sick-list on the 28th of February, and not discharged to duty until the 13th of March. As I have previously mentioned, however, it was his general cachectic state rather than the local affection which kept him so long on the list.

For some time previous to our arrival at Corfu that island had been visited by a continued succession of rain storms. The diseases common to that season of the year, and aggravated by the state of the weather, had been very numerous, and scarlatina in a very fatal form was epidemic at the time of our arrival, and had been so for some time previously. On the 27th of March, two days after leaving Corfu, when on our passage to Navarino, a fortnight after the last

case of erythema had been discharged to duty, another case of erythema came on the list. It was of a mild character. On the same day, also, two cases of cynanche, one mild and the other more severe, and running on to abscess of the tonsil, made their appearance. Two days afterwards, two cases of erysipelas presented themselves, one mild, in a young man very prone to the disease; the other more severe and complicated, with deep-seated abscess. From our being at Navarino at the time, it was impossible to land these men. They were therefore treated on board, but as carefully isolated as they could be on board ship. These cases came on the list on the 29th of March, and the last was discharged to duty on the 12th of April. On the 30th of March, another severe case of cynanche presented itself, the fauces being very highly injected, the tonsils much enlarged, and one of them running on to abscess. These throat affections presented a very characteristic appearance, and occasioned no little anxiety; for, independent altogether of their own severity, their presence at a time when erysipelas was prevalent suggested some connexion between the affections; and the relation in which diphtheria stands to erysipelas is too close not to render such a connexion a fruitful source of anxiety and watchfulness. In no case, however, was there any appearance of diphtheritic exudation.

On the 31st of March, a man was placed on the list with a very trifling erythematous blush on his ankle, which altogether disappeared next day. Another sharp case of cynanche presented itself on the 1st of April, and on the 3d we had a case of erysipelas attacking the face and head. This patient was only six days under treatment, the tincture of iron acting on him like a charm. The next case of erysipelas occurred on the 14th of April, in the person of the man Sheridan, with whom these seizures commenced. It was followed on the 16th by a mild case, affecting the nose and face, and and this again was succeeded by a very mild case of erythema on the 17th. We had in the meanwhile (on the 11th) arrived at Malta, so that the erysipelatos cases were at once discharged to hospital. On the 21st, there was another very mild case of erythema; and on the 7th of May we had a case of erysipelas, which was discharged to hospital on the 8th; on which day, also, another case presented itself, and was discharged to hospital at the same time. One case of erythema, occurring on the 14th of May, concluded the list of cases up to the time of my giving up medical charge of H.M.S. Marlborough.

I may briefly notice one or two points suggested by this succession of cases of erysipelas. In the first place, in several of those affected, the disease was the result of constitutional peculiarity, or diathesis. Neais, Sheridan, and two or three others, were all more or less prone to it. In Neais's case the diathesis was so marked that I had fully made up my mind, had he again returned to us from the hospital, to have brought him before a board of surveying

officers, with the view of having him invalided from the service as a dangerous man to be on board ship. As it was, he was invalided by the hospital authorities, the disease having shown so much severity during his stay in the hospital, and having passed over so much of his body, that it was deemed advisable to remove him from the station altogether. Sheridan also, with whom the seizures commenced, showed a marked proclivity to the disease, and there can be little doubt that he also should have been sent out of the service. I am inclined to think that a second and certainly a third attack of erysipelas should be considered just ground for removing a man from a ship. Our improved knowledge of the treatment of this disease has disarmed it individually of much of its terrors; but it is impossible to foresee, should it once gain admission into a ship, how it may react upon other diseases. The naval service is of such a character that wounds and accidents form a large proportion of the affections under treatment; and it will be manifest that, such being the case, erysipelas, of all diseases, is one of the least desirable to be allowed to exist among a ship's company. So long as men like Neais and Sheridan are in a ship, it cannot be said to be free from danger; and while there would be little detriment to the public service by the removal of such men, there might be great suffering to very many, much impairment of the efficiency of a ship, and in this way serious loss to the public service, should they, by being retained, cause a spread of the disease on board.

It would be difficult to say what share the peculiar condition in which we found the island of Corfu had in multiplying our cases of erysipelas, and in furnishing the cases of cynanche. It is interesting to remark, however, that after our short stay at that island, the cases certainly did multiply, and that we had cases of cynanche not unlike that which characterizes scarlatina. That there is a close affinity between scarlatina and erysipelas cannot, I think, be doubted. The fact that there are certain allied diseases common to both would indicate this. Thus, while one author observed the simultaneous prevalence in a very marked manner of diphtheria, scarlatina anginosa, erysipelatous inflammation and sloughing, and puerperal metritis,—another states, that when erysipelas is epidemic, scarlatina and puerperal fever may be looked for. Dr Alexander Wood, in a communication read before the Medico-Chirurgical Society of Edinburgh, entitled "Notes on some of the more unusual Complications of Scarlatina, and more especially on the Relations between Scarlatina and Erysipelas," drew attention to several affections common to both diseases, as illustrating a marked connexion between them; and Dr Warburton Begbie, in an article on "Temporary Albuminuria," in the Monthly Journal of Medical Science for October 1852, considers the temporary albuminuria which occurs in both diseases as another link in the chain of connexion and relation between scarlatina and erysipelas. There is sufficient evidence, I think, then, of a connexion between these af-

fections, to justify us in referring the more frequent occurrence of seizures of erysipelas and erythema, as well as the accession of cases of cynanche, to some peculiar epidemic constitution of the locality we had been in.

In a large ship such as the Marlborough, with a complement averaging 1200 officers and men, it will always happen that a certain number will be found with a constitutional tendency to erysipelalous disease. The danger incurred by having such men on board will be in proportion to the regard which is paid to those important hygienic elements—ventilation, cleanliness, dryness, and enlarged sleeping accommodation. It will be evident, however, that the most certain mode of avoiding danger will be to get the obnoxious men out of the ship as soon as possible; and although I am not aware of any precedent for invaliding men on account of this diathesis, I should, as I have already remarked, most certainly have submitted the cases of the men Neais and Sheridan to a board of surveying officers, had I been in a position to do so.

In neither of the attacks in the man Neais, nor in two attacks in a man Routley, a subject also very prone to this form of disease, were there any signs of external injury or irritation. In both of these men, the premonitory symptoms were so marked that they were able, from former experience, to foretell the approach of erysipelas. This is in opposition to the assertion made by Trousseau, that erysipelas always originates from some external injury or irritation, although it may be very slight. In the man Palmer, moreover, the premonitory fever was of such a character as led me to suspect that the seizure was erysipelalous, and the limbs were in consequence very frequently examined during the day for the eruption. It was not, however, until sixteen hours after he was taken ill that the specific eruption made its appearance on the right leg, where previously there had been no appearance whatever of external injury or irritation. On the 9th January 1850, a communication was made to the Obstetrical Society of Edinburgh, by Dr Hill of Leuchars, "On the intimate Pathological Connexion between Erysipelas and Puerperal Fever." In this communication he gives two cases which appear to me quite subversive of Trousseau's doctrine,—for in both cases the disease occurred to the foetus in utero. In the one case, a carpenter in the village of Leuchars wounded his hand while making a coffin. Subsequently, while putting the corpse in the coffin, he felt some fluid from the body come in contact with the wound on his hand. In a few days severe erysipelas ensued. Some days afterwards, his wife was taken ill with a similar attack in the right hand and arm. During their illness, their daughter, a young servant girl in the seventh month of pregnancy, and who had come to their house to be confined, was seized with a feverish attack, for which Dr Hill prescribed. Next morning, the girl was taken with labour, and soon gave birth to a dead child, whose body had all the appearance of being affected with the same

disease as the arms of the mother's parents previously were. The girl herself died on the same day, with all the symptoms of malignant puerperal fever. The other case is even more positive. On the 30th of August, Dr Hill was called to see a girl with erysipelatous inflammation of the right parotideal region. The gland was considerably swollen, and there was slight fluctuation in it. After being fomented for a few days, a large quantity of matter was discharged. On the 8th of September, he was sent for to see the mother of the girl, a strong healthy woman, æt. 45, and nearly at the full period of pregnancy. He found the glands at the angle of the jaw slightly swollen, and erysipelas spreading from over them to the ear. On the morning of the 10th, labour commenced, and during its progress the erysipelas, which had not been affected by the treatment instituted, entirely disappeared. The infant was born in the course of the afternoon, having its face and forehead completely covered with erysipelas. In two days it disappeared, but returned again in a week, commencing at the vagina, spreading over the abdomen, and carrying off the child in a short time. (*Monthly Journal of Medical Science*, March 1850, p. 299.)

With regard to the treatment of erysipelas and erythema, I may state briefly, that in those cases which we were unfortunately obliged to treat on board, the tincture of the sesquichloride of iron was freely used, and with the happiest results. This remedy, indeed, has divested erysipelas of almost all its terrors. Stimulants were also employed, and the general state of the secretions attended to. Fomentations of acetate of lead and opium were the principal local applications.



ARTICLE III.—*On the Therapeutic Effects of the Resinous Vapours of the Coniferæ.* By W. W. IRELAND, M.D. Edin.

IN a paper in this Journal for July 1862, I made the observation, that in pine-forests the quantity of ozone in the air was increased by their resinous emanations, which contained, if not ozone itself, at least a substance possessing many of its singular properties. The hypothesis was thrown out that these ozonized emanations might be useful in destroying the malaria of miasmatic fever. Unfortunately I am unable to add to this any further observations or illustrations save the slight one, that some plants common in marshes, especially the *Lemna minor*, give out emanations which act powerfully in colouring Schönbein's ozone test-paper, but only under the influence of the sun's rays. This might in some degree help to explain the co-existence of malaria and ozone in the same localities, and the fact that malaria is much less powerful during the day, so that people may then cross swamps without any injury where it would be dangerous to travel during the night; it would also agree with the observation that certain plants have appeared to

exert a beneficial influence in destroying marsh miasmata. This hypothesis will, no doubt, if found worthy, be worked out by our medical brethren in India, who have materials in abundance for carrying out the inquiry.

The author of a review upon the *Almanach Général d'Arcachon*, in the August Number of this Journal, has adduced some striking facts supporting the view that the resinous emanations of the coniferæ have a favourable effect upon bronchitis, phthisis, and rheumatism. I have now much pleasure in recording the instructive practical observations on the therapeutic effects of resinous vapours which have been accumulated at the little town of Die, in the south of France.

History of the Cure.—The method of treatment to be described has been in popular use among the mountains of Dauphiné for more than a century. It was first discovered by pure accident. Four labourers were cutting wood, from which to prepare pitch, when one of their number was disabled by a sudden attack of acute rheumatism in the legs. He was, however, still able to arrange the cut-wood in the furnace. After working a little at this employment, which exposed him to the resinous vapours that issued from the wood, he felt his complaint gradually disappearing. The cure was rumoured about among the peasantry; but the knowledge of this method of treatment remained confined to the valley of Chatillon till about twenty years ago, when it began to attract some attention.

Species of Pine employed.—The tree employed for the baths is the *Pinus cembrot*, which grows in the mountain of Glandaz. It is generally regarded at Die as a kind not hitherto described, and is called *eouve* in the patois of the province, though I cannot see the grounds for believing it even a variety. It is a lofty tree, between twenty-five and thirty feet in height, which grows at high elevations, branches ascending, leaves in pairs. The cones are about an inch and a half in length, obovate, almost sessile, clustering round the axis in verticels from three to six in number, their apices pointing downwards; more than two of the six seldom come to maturity. They are of a reddish tint and mottled appearance, owing to the free part of the scales being of a lighter colour at their extremities, which are tipped by rudimentary spines. The outer layer of wood is covered by a thick coating of honey-coloured resin, and is separable from the layer within, which, in its turn, becomes endued with the same secretion; so that layer after layer is stripped off the trunk, from a foot above the soil, as high as a man can reach. This may be repeated once a-year five or six times, till the tree is so reduced in diameter that it is dangerous to approach it. This resin has a pungent smell, and, when volatilized, acts readily on Schönbein's ozone test-paper. M. Chevandier thinks that the *Pinus sylvestris* and *Pinus maritima* might in default be substituted, and it is very likely that the tree is principally valuable from the very large

proportions of resin it secretes; but every botanist knows that the same plant sometimes possesses medicinal properties in one district which in another it either entirely wants or possesses in a much feebler degree.

Physiological Experiments.—It struck Dr Chevandier at Die,¹ that it was very singular that peasants suffering from rheumatism should cause themselves to be borne to an elevation of above 6000 feet, where the ground during a great part of the year was covered with snow, in order to expose themselves to the vapours of a pitch-furnace, and that they should return, often on their own legs, from this ordeal, apparently so dangerous, cured of their complaints. He considered that the remedy must be a valuable one, and that it would be still more so if applied under more favourable conditions. Getting a pitch-furnace erected at Die, he commenced to examine the subject with all the zeal of a philosopher. He found that the peasants had been accustomed to sit in the furnace at a heat of 70° Reaumur (189°·5 Fahr.), and his own experiments proved that in an atmosphere saturated with terebenthine vapours that very high temperature was not only tolerable but agreeable. Dr Chevandier himself entered the furnace to study the physiological effects. Its walls radiated a heat of 82° Reaumur (216°·5 Fahr.); between his legs it was 68° (185° F.); and placed in the current of air that entered, it was 60° (167° F.). The symptoms he noticed were a slight formation of the skin, which soon became red, and gave out an abundant but easy perspiration. The pulse rose from 65 to 88; it was full and firm. His sensations were agreeable, his thoughts easy and rapid. After twenty-five minutes, he noticed some confusion in the head, and left the furnace for his bed. The pulse soon rose to 95, with palpitations and some further signs of confusion in the head, very copious perspirations, and a slight irritability of the bladder. Next day, he felt an increased appetite and an unusual activity. Dr Chevandier has given up all connexion with the resinous baths at Die, but it was he who first communicated the results to the world, and by his experiments fixed the conditions for success.

Forms of Bath used.—The baths used by Dr Faure still preserve the original type of the pitch-furnace. They resemble a large baking-oven. The fire is below, and the resinous layers of pine-

¹ See the article of Dr A. Chevandier: "Troisième Mémoire sur l'emploi des Bains de Vapeur Térébenthinée contre le Rhumatisme."—*Revue Médico-Chirurgicale* de Paris, Mai 1852. As also the article of Dr Benoit, same Number. There is a longer article by Dr Chevandier in the *Revue Médicale Française et Etrangère*, 15 Juin 1854. Dr Benoit has published two pamphlets on the subject: "Nouveau Mode de Traitement des Affections Rhumatismales et Catarrhales par les Vapeurs Résineuses."—Valence, 1853. "Etablissement Thermo-Résineux du Martouret."—Vienne, 1858. I have myself several times visited the baths at Die, and have derived much information from the kind and obliging communications of Drs Benoit and Faure, as well as from Dr Chevandier himself.

wood are strewed upon the floor. It is found advisable not to raise the heat below so high as to char the lower layers of wood in the bath. The patient sits upon a bench, wrapped in a porous covering of wool. In this establishment about a hundred and fifty kilogrammes (330 lbs.) of wood are used on an average of from fifteen to twenty baths. Dr Benoit has sought to improve the form of the apparatus by introducing the vapour through pipes to a row of enclosed seats, in which the patients sit, wrapped in loose woollen mantles. The temperature under the mantle is about 60° C. (140° F.), that of the air respired about 40° C. (104° F.) lower. The number of baths taken is from fifteen to twenty.

Physiological Effects.—The temperature to which the patients are now exposed is ordinarily from 60° C. to 70° C. (140° to 158° F.), and they remain from fifteen to twenty minutes. After the feeling of overpowering heat has passed away the sensations of the patient are very agreeable. The perspiration, which is very abundant, is often unnoticed till the patient's attention is directed to it. It has been remarked, that the members affected by rheumatism or sciatica remain longer dry than the healthy parts. The cutaneous transpiration generally reaches its greatest intensity at the third bath. Occasionally the fit of perspiration returns at the accustomed time, even after the patient has ceased to take his bath. After he has been fifteen or twenty minutes exposed to the resinous vapours the skin becomes red; the face is often very much injected, but the determination of blood towards the surface seems rather to have the effect of diminishing than causing any tendency to cerebral congestion, even in the most plethoric subjects,—an important point, upon which limited space prevents me from enlarging.¹ The pulse ordinarily rises from ten to fifteen beats, and sometimes at the outset the respiratory movement becomes accelerated; more rarely, a slight oppression is felt, which disappears in two or three minutes to give place to deep and easy expirations. When the allotted period has expired, the patient, who seldom feels any inclination to leave, retires to bed, where he remains an hour or two. The perspirations are still very profuse. After the baths the appetite becomes increased, and the thirst becomes more pressing; apparently the liquid ingested goes to replace the fluids lost by cutaneous transpiration; for the secretion of the kidneys is not augmented, the urine acquires a violet colour, and gives out a terebenthine odour. Though the system is, no doubt, powerfully acted upon, this method of treatment is said to be attended with less relaxation than that which ordinarily follows the use of hot saline baths. Occasionally, however, the patient feels the need of a cessation of

¹ The attempt has been made to immerse the body in the baths, leaving the head free. In that case, of course, the lungs would not take up any of the resinous vapours, and the tendency to cerebral congestion would likely be increased rather than diminished, as less cutaneous transpiration would take place on the face and scalp.

two or three days after five or six baths,—a more prompt cessation than is noticed at Wiesbaden, to which so many rheumatic patients resort. M. Benoit, however, states that it is, as a general rule, not necessary to stop the daily repetition of the baths before two or three days. He advises the patients, if the first is incomplete, to return for a second course after an interval of two months.

Diseases Treated.—I. Those diseases which are included by Hufeland under the term of rheumatoses: that is, rheumatism in all its forms, acute, sub-acute, and chronic, gouty and nervous; hemicrania; and rheumatism of the viscera.

II. Inflammation of mucous surfaces; chronic bronchitis; laryngitis; uterine and vesical inflammation.

III. Neuralgia.

IV. Glandular enlargements.

V. Secondary and tertiary syphilis.

Other diseases,—as otorrhœa, gonorrhœa, tænia solium,—have derived benefit from the use of the baths; but I do not think that medical practitioners will be disposed in these complaints to abandon the usual method of treatment for that of resinous fumigation. Nine-tenths of the patients who come to Die are suffering from rheumatism. Muscular rheumatism yields more readily than any other form; lumbago almost constantly disappearing after five or six baths. Articular rheumatism yields more slowly, and patients who have come expecting to be cured of the long-continued lameness resulting from chronic rheumatism have in several cases been disappointed;¹ and now and then diseases of the spinal cord have been sent up to be treated as lumbago, but without success. The treatment appears better adapted to chronic than to acute rheumatism; but the medical practitioners at the baths are strongly of opinion, that no case of rheumatism pure and uncomplicated has ever yet left their establishment uncured. The sequelæ of acute rheumatism,—such as endocarditis, pericarditis, effusions in the pleura,—are stated to yield more rapidly to this than to any other form of medication. Gout does not appear so amenable to treatment, though some cures are reported. After rheumatism comes chronic bronchitis, which disappears with no less celerity. Most likely the vapours act directly upon the diseased mucous membrane. We cannot follow Dr Benoit in his attempt to trace bronchitis to the same cause as rheumatism. Both, no doubt, are the results of an undue exposure to cold, but rheumatism is certainly the consequence of a constitutional taint; and though we have sometimes bronchial rheumatism and rheumatismal pneumonia, ordinary bronchitis has no such complication. The fact that turpentine

¹ Several very remarkable cases of cure of articular disease, followed by ankylosis, are recorded; the limbs resuming, almost in a perfect degree, their former flexibility. These cases seem to have been the result of rheumatic or scrofulous disease, but are classed under the term of white swellings, *tumeurs blanches*.

appears in the urine may account for the cures of catarrhs of the bladder and of gonorrhoea, but not so easily for those of uterine inflammation; though the fact that the baths have been successfully used against tania, shows that the turpentine passes through the mucous excretors of the intestines. Cases of neuralgia sometimes prove obstinate, and some which have resisted the baths have disappeared after the use of the mineral waters of Ardèche. I have myself, however, seen a case of facial neuralgia unconnected with rheumatism twice disappear under the action of resinous fumigation with a small lamp.

The contra-indications are organic affections and palpitations of the heart, and the hæmorrhagic diathesis; weakness is not a contra-indication.—(Dr Chevandier.) I have deferred speaking of phthisis till now, in order that it might be done more at large.

Effects of Resinous Vapours on Phthisis.—Five cases of phthisis are said to have been successfully treated by courses of twenty baths. In one of these a vomica had formed; the rest were in the first stage. Several cases of a more advanced nature were not admitted for treatment. One of the physicians is, however, doubtful as to the efficacy of the treatment in phthisis, and the patients cured did not cease from other methods of treatment. The circumstance that pectoral complaints never occur among the *resiniers*,—those who work in preparing turpentine,—and the fact long known, I believe, to practitioners in the south of France, that pectoral complaints and rheumatism are much rarer amongst the inhabitants of districts covered by pine-forests,—leads us to infer that a sojourn in such localities would be highly useful to patients suffering from phthisis. Here an important question arises,—

What is the principle in resinous vapours which works out these therapeutic effects? Is it simply the turpentine vapour bath? No; for patients have derived benefit from simply inhaling the air of pine-forests; and vapour-baths impregnated with the turpentine of commerce have been tried, but with little success. One cannot, however, deny that turpentine has been already used against most of the diseases which are cured by the resinous baths, although its physiological effects when taken by the mouth are different from those above described. Nor can we overlook the consideration that the cure must be promoted by the sudorific effects of the aqueous vapour, and by the stimulant effects of the volatilized turpentine upon the skin. There is still another agent which must have some influence on the patient.

We cannot well explain how our remedies act in removing phthisis and rheumatism till we know what is the real primary aberration in these diseases,—and our speculations on this point are rather immature;—nor would I reject one established therapeutic fact, because it did not square with some uncertain physiological speculation. At the same time, our hopes ought to rest more upon observed facts than upon theoretical deduction. The observations

of the physician have always outrun the explanations of the physiologist. We shall most likely never succeed with our scalpels or microscopes and chemical re-agents in comprehending that intricate balance of known and unknown forces which constitutes health. And our remedies will continue to cause a number of chemical combinations and vital changes which science will neither be able to perceive nor explain, though at once appreciated through the nervous system of the patient.

Rheumatism and phthisis have been viewed by some physicians as indicating conditions of health antagonistic to one another. The only thing in common is the increase of fibrin in the blood. The antozonide existing in the resinous oils must have a considerable effect upon the nervous system, and in altering the composition of the blood, if we regard it as analogous in its composition to ozone; and it perhaps bears an important part in the cure. Let us consider the chemical processes which, from recent researches upon the volatile oils, we know must take place in the baths at Die. Under the influence of the sunshine a very large quantity of oxygen, perhaps sixteen times their weight, would be absorbed by the oils and resins of the wood, and a large proportion of this oxygen would exist in a form that possesses most of the active properties of antozone.¹ All this gas would be given off on the application of heat, and, obeying its affinity for the blood, would enter the system by the lungs and skin, modify the condition of the blood, and produce effects resembling those observed by Dr Chevandier; and they may also help to account for the very high temperature (above 70° Reaumur, 189°·5 F.) which patients are able to endure in the resinous baths; whereas, in the vapour-baths of St Louis, patients have a difficulty in enduring a temperature of 33° Reaumur (106 F.), for half the time, where the whole body is immersed. In the one case, we have a large quantity of respirable air set free; in the other, the air is displaced by the vapours of water and other medicated substances. These speculations may appear singular, and yet it would be much more remarkable if the ozonized gases were to exert no effect upon the vital economy.

Ozone has two properties which might make it of service in diseases of the chest. It oxydizes more powerfully than neutral oxygen, and has undoubtedly a more powerful chemical affinity for the blood.²

¹ Since writing the above a few experiments, too simple to need detail, have enabled me to repeat this statement with confidence.

² It is well known that ozone has a powerful chemical affinity for the blood. A few drops of blood will cause all traces of ozone to disappear in a closed vessel. The antozonide possesses its oxidizing property, but the new re-agent proposed by Houzeau will enable us to distinguish the emanations of trees from the ozone of the atmosphere. Houzeau's test is carried out by calculating the quantity of potash produced by the decomposition of iodide of potassium, and appears much superior in accuracy to the results obtained from the ozone scale. Schönbein, in a recent paper on the subject, wishes the substance in the air to

The observations of Dr Theophilus Thomson, prove that ozonized cod-liver oil exerts a remarkable influence in reducing the hurried pulse of phthisis to the natural standard.¹

This result is brought about without any depression of the powers of the heart or system, such as follows the use of digitalis or tartar emetic. On the contrary, the other unfavourable symptoms partake in the improvement, as if the remedy had a specific effect upon the disease. It is surely, however, of advantage that the remedy, if a volatile matter, should be applied directly to the lungs; but courses of twenty vapour baths do not seem likely to eradicate so inveterate a malady. We should rather recommend phthisical patients to try the effect of a milder climate among the exhalations of the pines of Arcachon. There are other localities where the climate is even better adapted to a delicate chest than the shores of the Bay of Biscay. For example, the great pine-forests between the Crau and the Mediterranean, a little to the west of Marseilles, and those surrounding Aix, in Provence. But, as yet, there is no accommodation for strangers, who always resort to Nice. At Arcachon, then, under a more powerful sun, the patient may go with some new hope of improvement. And, it may be added, every consideration adduced in this article strengthens the conviction of the folly of the pernicious habit of patients suffering from chest complaints going to live in large cities such as Florence, Rome, or Naples, where the air loses so much of its oxydizing virtues. But the majority of patients have, unfortunately, not the means to betake themselves to distant countries for change of air, and can our art do anything for them?

Inhalations in Phthisis.—It is likely that inhalations of ozonized air might be substituted for those of resinous vapours or of chlorine; just as the preparations of the salts of the permanganates can produce disinfecting effects similar to those of coal-tar or chlorine.

Dr Wood² has evidently considered the question of terebinthinate inhalations. "Much benefit," he remarks, "may be obtained, in reference to the bronchial inflammation, from certain inhalations, and it is probable that the greatly vaunted results of these remedies, in certain cases of phthisis, have been owing more to their influence on the diseased mucous membrane, than on the tubercles themselves or their cavities. It is not impossible, however, that in cavities quite emptied of tuberculous matter, and not surrounded by tuberculous deposit, they may favour the healing process by a gently stimulant impression. They should be employed only in the second

be called antozone. True ozone is distinguished by colouring sulphate of manganese, which it changes into peroxide. See Schönbein über die langsame und rasche Verbrennung der Körper in atmosphärischer Luft, Basel, 1845; and Annales de Chimie et de Physique, Paris, Avril 1863.

¹ See Ranking's Half-Yearly Abstract, 1860, vol. xxxi. Two Lectures by Symes Thomson, M.D., etc., London, Churchill, 1863.

² Practice of Medicine, Philadelphia, 1855, vol. ii. p. 100.

stage of the disease. As a general rule, the best mode of effecting inhalation, is to impregnate with the volatile matter the air ordinarily breathed by the patient. When circumstances confine him to his chamber, he may thus be kept constantly under the remedial influence; and, at any rate, it may be made to act upon him through the night. This steady impression is much more effectual than a more powerful one made at certain intervals, while it will be less apt to irritate the lungs. When this mode of inhalation is impossible or inexpedient, some one of the instruments denominated inhalers, may be resorted to. The particular substance which, within my observation, has appeared most effectual, applied in this way, is *tar vapour*. The air of a chamber may be conveniently impregnated with it by placing a little tar in a cup, which is to be immersed in water contained in another vessel, and heated by a spirit-lamp. The common nurse-lamp answers the purpose admirably well. The effects of a water-bath are thus obtained, and the igneous decomposition of the tar prevented. Neither with this, nor with any other vapour, should the air be so far loaded as to become at all oppressive when breathed. Other terebinthinate and balsamic vapours may be applied in the same way. Their use, to be effectual, must be persevered in for months, sometimes for years. It is probable that the advantage which experience has shown to be occasionally derived from a residence in the midst of *pine-forests*, is owing chiefly to the terebinthinate exhalation from the trees."

Tar may be useful in diminishing the expectoration where this is desirable, but if we use it we lose to a great extent the benefit of the observations made in France, Germany, and America, of the favourable results derived from the emanations of pine-forests. These are not the vapours of tar, but of the more volatile oils which are expelled by combustion. The workers at the pitch furnaces of Dauphiné understood this better. They introduced their patients when the furnace had cooled down sufficiently, and after it had received its second store of pine-wood. In like manner, we should recommend fumigations of the resinous layers of fresh pine-wood, or green fir-cones where they can be procured; and if this is impracticable, try fumigations of oil of turpentine previously exposed to the sun's rays. It would also be useful if the patient had a room or conservatory filled with saplings of pine. I believe this has been actually tried in the south of France without any great success; but it must be kept in mind that phthisis occurring amongst the inhabitants of Southern France, generally runs a very rapid course, approaching to acute tuberculosis, and cannot be arrested by such mild remedies. Moreover, I believe the plants were not placed in the sunshine, without which the emanations would be very feeble indeed. This method of treatment ought to be continued for years, of course under the eye of a judicious physician, and could accompany the ordinary medical treatment. I would add a small dose of some preparation of iron, for the iron

in the blood has been proved to increase its attractions to ozonized air.¹ As the normal proportion in the blood is very small, we may presume that it would be of advantage to increase it. Much the same treatment might be employed in chronic bronchitis, only the fumigations ought to be stronger.

Concluding Remarks.—In the application of heat to a substance so complex as pine-wood, no doubt a great variety of gases are evolved; and it is likely that this form of treatment will not be so easily reduced to the application of its active principles. Baths like those of Die have been attempted in several other places, at Grenoble, at Valence, and near Vaucluse. But the wood they employ is, I am told, not the same. All patients labouring under obstinate rheumatism or bronchitis, should, if they possibly can, betake themselves to Die, which is reached by a diligence starting from the railway station at Valence. The season generally lasts from the first of June to the end of September, but is occasionally re-opened. Patients need be under no doubts of the efficacy of the treatment, or of its superiority to the feeble means we possess of combating these distressing maladies. The success of the treatment is attested by a large number of very interesting cases, published in the works I have cited. Indeed, many wonderful cures are subjects of popular notoriety. I have had many opportunities of conversing with the patients who resort to the baths. Above three hundred have done so this season, and physicians have followed their patients to share the improvement in health they had already witnessed.

Two or three years after their establishment, Dr Bonnet,² of Lyons, pronounced the success of the treatment employed in the baths as superior to the effect produced by the most celebrated mineral springs; and Dr Chevandier's communications have been favourably reported upon by the Academy of Medicine. The two establishments, Martouret and Sallières, are in the neighbourhood of Die, a small country town situated in a very beautiful valley among the Alps of Dauphiné, by whose lofty peaks it is guarded from the "mistral," while its elevated situation saves it from the scorching heats of the southern summer. The charges at the establishment are no greater than those of a moderate continental hotel, and the people round being about one half Protestant, are kindly disposed to the English.

L'ABBAYE, DIE, DRÔME, *September 1863.*

¹ Canstatt Jahresbericht, 1858, band iii. p. 149.

² Traité de Maladies Articulaires,—Chap. sur Rhumatisme, p. 169.

ARTICLE IV.—*Cases of Hernia.* By JAMES MORE, M.D.,
Newton-Stewart.*Oblique Inguinal Hernia.*

ON the 1st of August, I found Robert Thompson, æt. 66 years, suffering from a strangulated oblique inguinal hernia on the right side. As it had been down for twenty-six hours, and had resisted all the usual means of taxis, I determined to operate at once. With the assistance of Dr Murray, this was accomplished in the ordinary way. When the sac was opened, we found great difficulty in returning the bowel, both on account of the presence of the *caput cæcum*, and also on account of the almost perfect adhesion of the bowel to the sac. The bowel was in a state of intense congestion, being quite livid and purple on one side. Although we were very much cramped for room, and had only the light of two miserable "farthing dips," the operation did not last more than twenty minutes. Before leaving him (it was one o'clock, A.M.), I gave him two grains of opium, with orders to have it repeated every four hours.

2d August.—On calling on our patient this morning, we found him coolly *standing* in the middle of the floor, dressed, and seemingly not a whit the worse for last night's work. He told us that, not feeling very comfortable in bed, he had just got up for a little to have a smoke. Of course, we instantly put him to bed, and on examination, found all as we had left it. He had no pain, and his pulse was 100, soft.

3d August.—Thompson had some sleep last night, but complains of great pain over the lower part of the bowels; pulse 100, but rather hard and wiry. The wound looks well, but the scrotum seems very much swollen from the effusion into the sac. Instead of the opium, we ordered a calomel and opium pill every four hours, and linseed-meal poultices to be applied over the seat of pain.

4th August.—Pulse 100, softer; pain in the bowels not so *bad*; the scrotum is now larger than before the operation, quite hard and tense; indeed, Thompson thinks the bowel is still down. An opium pill to be taken every six hours.

5th August.—This afternoon, Thompson expresses himself as being a great deal better; the bowels opened spontaneously and freely; the pulse 90, and quite soft; the wound looks healthy, and is discharging freely enough.

6th August.—A decided change for the worse in most of the symptoms. He is very feverish, has an anxious expression of face, and has constant hiccough. He has had no sleep for twenty hours, and the pulse is 120, hard and irritable. On cross-examination, we found the cause of the above untoward symptoms in his own foolish attempts to "*put up*" the *scrotum*. Under

the impression that the bowel was still down, Thompson had been fighting six hours at a time with the distended scrotum, which was very much inflamed in consequence. Ordered two doses of pil calomel et opii, and poultices to the scrotum.

8th August.—Much better this morning, the bowels having acted freely during last night; there is no pain, and the pulse is 100, and softer; the hiccough still continues. Pil opii every six hours, and four ounces of wine per diem.

10th August.—Much better, the hiccough gone, the bowels regular, pulse 100, softer and stronger, no pain, and sleeps well, opium to be discontinued.

15th August.—Thompson is now out of bed, and is gradually regaining strength; the scrotum is still hard and tense, but comparatively free from pain.

24th September.—The scrotum, after pointing, broke this morning, and discharged an immense quantity of pus.

12th October.—Thompson called at my house and reported himself as now quite recovered.

This case shows well what nature can do in the country in seconding the efforts of the surgeon, for the presence of the *caput cæcum*, and the inflamed state of the tissues, rendered the case a bad one to begin with. Ten hours after the operation, Thompson got out of bed, dressed, and walked about the floor, which, of itself, was enough to have killed him; and, lastly, the inflammation and supuration of the scrotum was so much in the scale against his chance of recovery.

Unusual Case of Hernia.

Mrs Hughes, æt. 38 years, consulted me on the 16th of last March, on account of a painful swelling over the upper half of the abdomen. According to her own account, the above symptoms came on suddenly about a month ago, during a severe fit of coughing, which she had while sitting by the fireside. She felt something "give way in her inside," and, for the first time, noticed a lump about the size of an orange situated about three inches *above* the navel, a little to the right side. From this time the abdomen began to swell, she had constant sickness and vomiting, and, in consequence, was soon in an extreme state of weakness. She had not as yet spoken of her state to any one, as she imagined her symptoms were, for the most part, due to pregnancy. On examination, I found the whole abdomen very much enlarged, and a little above the navel a circumscribed tumour, as large as an orange, quite elastic, and exquisitely painful to the touch. When she coughed, the tumour bulged out into the hand, returning again to its old size when the cough ceased, in fact, it had all the appearance of protruded bowel: acting on this idea, I attempted reduction, and succeeded in returning the greater portion; but there still re-

mained a small hard knot, about the size of a pigeon's egg, which was so painful that Mrs Hughes could scarcely bear it to be touched. After a little careful manipulation, however, this also disappeared from under my fingers, rendering apparent the hernial opening, which, from its position, I considered to be caused by the parting of the fibres of the rectus muscle. I applied a compress-bandage over the spot, and am glad to say, that from that moment all the sickness and other disagreeable symptoms entirely disappeared; three days after the reduction, Mrs Hughes, thinking she was quite better, took off the bandage, and, as was to be expected, the tumour again appeared, and with it all the other annoyances. She was glad to have it again reduced, and the compress applied. I may add, that the general swelling over the abdomen (chiefly tympanitic) gradually subsided, and Mrs Hughes soon regained her natural size.

ARTICLE V.—*Medical Notes on New Zealand.* By JOHN BATTY TUKE, M.D.

(Continued from p. 229.)

It will be unnecessary to do more than simply enumerate the diseases to which the natives of New Zealand are liable, and particularize those from which they are exempt.

The most striking circumstance is, that the type of all diseases is low in the extreme; acute symptoms are seldom, if ever, to be observed even in epidemics of measles, scarlatina, etc. These diseases appeared in 1854, and carried off large numbers of natives; but I have been informed by practitioners who witnessed the epidemic, that few succumbed to the disease in comparison to those swept off by the sequelæ. Their peculiar habits, alluded to in a former paper, account for this: pulmonary inflammations almost necessarily following on reckless exposure to cold. The fever was of a low type, and of longer continuance than usual amongst Europeans; the inflammatory condition of the mucous membranes was evidenced by a lurid duskiness of colour so characteristic of an enfeebled constitution. Diarrhœa, severe and exhausting, was a constant attendant, and the eruption scanty. Local inflammations, as erysipelas, are seldom accompanied by severe pain, and the redness and heat are not so intense as characterize that disease in Europe.

The most common diseases of the lungs are bronchitis, emphysema, and phthisis. Pneumonia or pleurisy never came under my notice, but I have no reason to believe that they do not occasion-

ally occur. The former diseases are engendered by the mode of life acting on a strumous constitution.

Diseases of the heart are by no means uncommon, more particularly hypertrophy and dilatation of the aorta. Cardiac dropsy is not unfrequently seen; in one instance the ascites was of a gelatinous consistency, rendering it impossible to relieve the patient by tapping. That the fluid was not ovarian was subsequently proved by dissection.¹ Dropsies, other than cardiac, are unknown, except hydrocele, of which I have met with three cases.

Inflammation of the brain or its membranes, apoplexy, epilepsy, hemiplegia, or paraplegia, never came under my notice, nor have I ever heard of their occurrence.

Rheumatism is the most common disease under which the Maori suffers. Few after a certain age escape it. It presents no peculiarities from the disease as observed in Europe, except that it seldom, if ever, assumes the form of acute rheumatic fever. Muscular rheumatism, lumbago, and sciatica are more common than the articular form of the affection, and in many instances the heart becomes seriously implicated. The administration of iodide of potassium generally works an almost magical cure even in very old chronic cases, and is an instance of the fact that the aborigines are peculiarly susceptible to the influence of remedies.

Tabes mesenterica is one of the scourges to which children fall victims; the only peculiarity amongst the New Zealanders being that the skin of the abdomen becomes very dark, frequently almost black. This disease runs its course very quickly, and a very large proportion of the early deaths may be ascribed to its prevalence.

Diarrhoea and dysentery are very common, and often fatal: exhaustion from the want of proper diet and other restoratives soon producing death. They are the most usual immediate causes of death in phthisis. The abdominal viscera are not liable to disease other than those mentioned, and urinary affections are unknown. Uterine diseases never came under my observation.

Skin diseases are represented by itch (*waihakihaki*), which is of very common occurrence, and leprosy. This latter is frequently associated with dry gangrene of the phalanges of the fingers and toes, and lupus of the face. When in this form, the natives give it the name of "*ngere ngere*." The leprous state of the skin is at first observed with an altered expression of the face, which is very revolting; in almost a year dry gangrene of the third phalanx of the fingers and toes ensues, and, during every year that the patient survives, death gradually steals upwards. Lupus of the face also frequently adds to the horror of the affliction, destroying the nose and cheeks. This disease is by no means so common as it used to be, and at the present day is of very rare occurrence. It is unac-

¹ This case occurred in hospital.

accompanied by pain, but usually has a fatal result within two years. In two cases which I visited, no trace of syphilis could be discovered by the strictest examination and questioning, and there was no reason to doubt the evidence, as the Maori has no object in concealing its existence. The disease is hereditary.

Diseases of the eye are frequent, almost invariably betraying a strumous origin. Chronic ophthalmia is the most prevalent; the irritation of smoke within doors, and the clouds of pumice dust without, materially assisting to render cure impossible. Cases of cataract occasionally present themselves. In two cases where I broke up the lens, the patients recovered rapidly without the least bad symptoms. Amaurosis is also occasionally met with.

Native surgery is of the roughest: the treatment of fractures consists of binding up the limbs in strips of bark, without any particular adjustment of the limb, notwithstanding which the results bear excellent comparison with the cures effected by bone-setters in our own country.

Diseases of joints are rare, as also are malformations; of the last, curvature of the spine, caused by accident in childhood, is occasionally met with; and hereditary club-foot is not very uncommon.

Glandular abscess, as is to be expected in constitutions teeming with scrofula, composes the great majority of surgical cases; and severe boils and carbuncles not unfrequently result in death. Stone is unknown, as also is fistula and stricture. Cancer has not as yet appeared in any form. Varicose veins are very common, more particularly in the south part of the Northern Island. On the Wanganui river, which flows between high cliffs for the greatest part of its course, the natives who reside on the tableland above, are obliged to reach their canoes below by means of long ladders; these vary from 80 to 150 feet in height, and to the carrying of heavy loads up and down, the Wanganui tribes ascribe the frequent occurrence of varicose veins. All Maoris, however, are accustomed to bear heavy burdens on the back; the women always carry their children in that position, besides very frequently having to act as beasts of burden in other ways. The result is the production of very severe varicose veins, which occasionally cause alarming and even fatal hæmorrhage.

The native method of resuscitation from apparent death by drowning, consists in placing the body on a stage above a slow, smoky fire, after suspending it by the heels for some time. I have heard that many cases apparently far gone have been recovered by this means, but I cannot speak from personal observation.

It would be needless to enter more into detail, as diseases in New Zealand present no marked difference in symptoms from those observed in home-practice, with the exception of the low type which characterizes all maladies. This state, in connexion with what has been mentioned in a former paper, viz., the risk attached

to leaving a native more than one dose of medicine, renders treatment in some instances very difficult and unsatisfactory; whereas in others, when the remedies employed can be regularly administered, the action and result are highly satisfactory. The good results accruing on the exhibition of iodide of potassium have been already mentioned; to these may be added, the rapid action of vegetable astringents in diarrhoea and dysentery, of grey and Dover's powder in febrile affections, and of wine in almost all diseases, as examples of the peculiar susceptibility of the New Zealander to the action of medicines. When it is practicable, as in an hospital, to administer remedies at regular periods and in proper doses, and also to enforce cleanliness and regularity, much can be done for apparently hopeless cases. It is a pity that, as a general rule, the colonial hospitals are considered by their medical attendants as a source of emolument, rather than as one of the most important means for the promotion of civilisation. I may here, perhaps, be permitted to remark, that from my experience and observation of native character, none of all the forms of missionary enterprise are so likely to succeed, and be of lasting benefit, as the medical mission. An earnest man of this class, who would strenuously endeavour to break through the old customs of savage filth, and seek to graft habits of civilisation on the theoretical Christian knowledge the Maori at present possesses, would work more good by such indirect religious teaching than a host of proselytizing divines and government employés. In the neighbourhood of Auckland, the Ngapuhi, by their closer intimacy with Europeans and European customs than most other tribes, have gradually learned the value of such institutions, and have been by no means backward in availing themselves of them. They have a trade of their own of no mean importance, own a considerable number of coasting schooners, saw and flour mills, cattle, sheep, and horses, in fact, have such a stake in the country as to make a war too serious a personal affair to enter upon. They, of all the tribes, are faithful to us. If the natives in the southern part of the island, instead of being debarred from mixing with the settlers (as has always been the endeavour of the missionaries), had been encouraged to associate with them and learn the English language, they would be by this time better subjects and better Christians. It is a mistake to suppose that a bad feeling exists between the races, and that the settler desires the extermination of the native; such reports are spread and circulated by those whose sentiments and interests are more inimical and opposed to colonization than those of King Potatau himself.

It is perhaps in their obstetrics that the natives of New Zealand present the most interesting subject for the observation of the medical inquirer. Whatever it has been in my power to learn on this subject has been necessarily at secondhand, as it is very rare indeed for a Maori woman to call a European practitioner to inter-

fare, even when she and her attendant midwives are aware that danger is imminent. In only one instance was I permitted to officiate, and in this case the patient was living with a European settler. It turned out happily however; the woman had been in labour for several hours, when the expectant father became anxious, and sent for me. After much trouble I examined the patient, and found a shoulder presenting; turning was resorted to, and mother and child did well. This happened shortly before my departure from the colony, otherwise I believe many more opportunities would have been afforded me of studying obstetrics amongst the aborigines, as the successful termination of the labour rather astonished the old women whom I superseded.

The period of fecundity commences sooner in Maori women than among white, but the development of the native girl occurs proportionately earlier. It is very difficult even to approximate to the age of Maori women—those that you suppose to be about 40 or 45 being actually no more than 25 or 30; but I have no doubt that childbearing ceases sooner than amongst women of our own race. This may be accounted for, to some extent, by the early aging of the women inducing their mates to forsake them for those possessing more attractions, but very much to the fact that abortion is very common—many females, I am informed on good authority, miscarrying as often as from two or three to ten or twelve times. Whether this is the result of procuration, or simply accidental, I cannot say; but I have strong suspicions that the former is very frequently put into practice. The native woman is, however, subject to many accidental causes of abortion. Hard work, and the carrying of heavy loads, fall to her lot; not unfrequently (as in other countries boasting of high civilisation) she receives castigation of a brutal nature from her husband; and, in fact, all the indignities usually heaped on females amongst savage nations fall to her lot. Another circumstance which contributes much to the lowering of her system is the extraordinary length of lactation. I have seen women whose flow of milk has continued for years, and it is not a very uncommon thing to see a Maori woman suckling a sucking pig, either from affection for her pet, or because she cannot find a child who requires a foster-mother. I am almost frightened to repeat a story related to me by a gentleman on whose statement the utmost reliance can be placed, of his actually having witnessed a child of five or six years of age alternately “taking a pull” at his mother’s pipe and breast. The period of lactation is undoubtedly very long, and in many instances where it has been suddenly checked, serious illness has resulted, showing that the secretion had become a necessary emunctory. Nor is the flow maintained to obtain immunity from conception, for the menstrual discharge appears at regular intervals within six weeks after childbirth. Another remarkable circumstance is, that you occasionally hear of women who have never been pregnant suckling children. I knew

of one instance of this, and was sufficiently well acquainted with the woman herself and family to be free from mistake or misinformation. It is mainly in consequence of these exhausting drains on her constitution that the native woman so soon loses her youthful embonpoint, and at an early age presents the hanging breasts and wrinkled skin of advanced life.

The process of parturition amongst the aborigines of New Zealand is not the same dreaded ordeal, nor so anxiously and fearfully anticipated, as it is amongst more civilized nations. It is not accompanied by so much suffering, nor so liable to be followed by the many serious results observable amongst our women. It is conducted on the simplest principles. When the native woman feels that her time is come, she retires solitarily to a creek or brook beyond earshot, preferring one that flows through the bush. There she gives birth to her child, performing the necessary duties herself, and on the completion of labour, steps into the water, washes her infant, herself, and clothes, then proceeds to her *whare* or hut, and re-appears within the family circle with her transposed burden, as if a matter but of slight moment had occurred. Her female friends of course know of her mission, but never interfere unless assistance is solicited, until the time comes for rejoicing that a child is born into the world. I have seen a woman quietly leave the house, and re-appear within the hour with her baby in her arms, and surrounded by her congratulating relatives. The simplicity of the whole arrangement strongly contrasts with the sensation produced in a European family, and has often seemed to me to be surrounded by an air of romance, otherwise difficult to connect with the subject.

The absence of all such civilized restraint as stays, etc., during utero-gestation, the natural mode of life, the larger size of the pelvis, and the greater elasticity of frame, uncramped by any of the conventionalities of European society, all tend to render the sorrow shorter and less painful. The immersion in cold water almost ensures inspiration in a viable child, and checks any tendency to hæmorrhage in the mother, nor does it seem to induce those symptoms which might be anticipated after such a proceeding in home practice. The umbilical cord is never tied, merely twisted. The result is, that umbilical hernia is very common, and a well-formed navel rare. In fact, natives always notice and admire the properly shaped navel of Europeans. After the child has undergone its primitive ablutions, the friends proceed to manipulate and bend all its joints, and conclude by flattening the nose. Whether this influences the shape of that organ in after-life is doubtful, as sufficient violence is not employed; but it seems as necessary a ceremony as the administration of sugar and butter used to be in our own country.

The early placing of the child to the breast is always insisted on by the Maori midwives, their experience here coinciding with our own.

Mal-presentations are, however, by no means unknown, and when nature cannot relieve the patient, death of necessity results. The usual treatment under these circumstances consists in scarifying the skin of the abdomen, and the employment of charms and incantations. This practice is, like some in more civilized nations, more warranted by antiquity than success.

In a former paper, I alluded to sterility being supposed to result from the habitual use of fermented food, in the shape of maize which has been steeped till putrid, and then allowed to ferment. This is purely a Maori idea, and one which they consider confirmed by the fact, that fewer fertile women are found amongst tribes where this food is a very favourite article of diet. The indigestion which it gives rise to may be the immediate cause,—dyspepsia so affecting the system as to render them less liable to impregnation.

All the causes which have been assigned in the first of these papers for the great prevalence of scrofula in the Maori race, tend likewise to the development of insanity in many forms. The following are the manifestations of mental alienation most frequently met with, in the order of the frequency of their occurrence,—idiocy, senile mania and dementia, morbid impulse, such as homicidal and suicidal tendencies, and general paralysis. The proportion of insane to the sane population is apparently by no means so great as amongst civilized nations; but it is not unlikely that many, particularly idiots, are never allowed to visit settlements, and even in their own villages are kept somewhat in the background. Congenital amentia is most frequently met with, in all its varieties, from mere weakness of intellect to the drivelling idiot, and, as elsewhere, is characterized by the small head and retreating brow; and next, senile dements, who are occasionally liable to fits of maniacal passion. A considerable proportion of those natives who reach advanced age settle down into a torpid state, a burden to themselves and to others whilst living; but as soon as death relieves their relatives of the incubus, grief is expressed by the wildest lamentations, and the burial is the occasion for meetings, of which alternate feasting and wailing are the material characteristics. All the forms of mania, monomania, and melancholia observable amongst the natives of New Zealand are purely emotional,—a fact which might be anticipated, when their peculiarly excitable temperament is taken into account. An orator at one of their meetings, when wound up to the proper pitch, might be readily taken for a maniac by one not conversant with their usages; and the same person might easily mistake a paroxysm of passion, as evinced by a native on very slight provocation, for the ungovernable rage of the insane. Even in ordinary conversation, the rapid utterance, sparkling eye, and undue gesticulation, are evidences of a nature which, when exaggerated by circumstances, renders him peculiarly susceptible of morbid impulse. A dreadful tragedy, the result of homicidal impulse, was lately reported in the colonial papers—a native having

murdered with a spade four others who were sleeping in a hut. He was acquitted on the ground of insanity.

Melancholia, in the Maori, sometimes assumes an extraordinarily deep, and even fatal form. The unhappy victim rolls himself up in his blanket, refuses sustenance, and seems to pine away, simply from a loathing of life. The self-imposed starvation does not appear to be the actual cause of death, so much as a pent-up storm of emotion—what is expressed by a “broken heart” being the nearest approach to his condition which suggests itself. I knew of a case which proved fatal in less than three days, the subject of it previously being in apparently rude health, and possessing a herculean frame. This has also been observed when a native has infringed the “Tapu,”—an unbearable superstitious remorse apparently seizing him, which is only terminated in death. Suicide is not unknown, the result of the same causes as the melancholia, and is often associated with circumstances which would supply incidents for novels of the morbid sensation class.

From having taken particular notice of two well-marked cases of general paralysis, occurring in the native village near the settlement of Wangarui, it seems probable that this disease is not alone developed in civilized society. The various causes of excitement already referred to are much the same as those to which the disease is traced in European practice, and perhaps both this and other forms of insanity are considered rare among savages in general, from the fact that with them statistical information is more difficult, often impossible, to arrive at.

Puerperal insanity, as far as my observation or information goes, is unknown.

Since the publication of the first series of these notes, news has been received of another outbreak of the King natives against the imperial government. This time it appears to be general over the island, and nothing now seems wanting, what between war and disease, for the extermination of a fine race of men, interesting in themselves to the world at large, and especially so to one who has lived and studied the peculiarities of savage life amongst them. But it seems the inevitable fate of all “dark skins” to fade away before the white man, and the poor Maori is no exception to the general rule.

Part Second

REVIEWS.

BRITISH PHARMACOPŒIA. *Published under the Direction of the General Council of Medical Education and Registration of the United Kingdom.* London: 1864: 8vo, pp. 444.

OF the more or less tangible benefits hoped to result from the recent Act to Regulate the Qualifications of Practitioners in Medicine and Surgery, there was none of a more unexceptionable quality than that fitted to accrue from its fifty-fourth clause. Under this, our long expectant readers will remember, it is ordained that "The General Council shall cause to be published under their direction a book containing a list of medicines and compounds, and the manner of preparing them, together with the true weights and measures by which they are to be prepared and mixed, and containing such other matter and things relating thereto as the General Council shall think fit, to be called 'British Pharmacopœia.'" It is the British Pharmacopœia which, after many tedious delays, perhaps inseparable from the delicacy and complexity of the duty enjoined, appears now before us and claims from us a welcome.

It would be neither regardful nor honest were we, Former
Pharmacopœias. in the first place, simply to express our gratification at having presented to us a new National Codex, to be acknowledged henceforward as the common rule for the United Kingdoms and their colonies, without using the occasion to look back also to own with how much skill, knowledge, and discrimination the several Royal Colleges of Physicians of London, Edinburgh, and Dublin had, in former times, and according to the lights of these times, discharged each the duty of preparing a pharmacopœia for their respective countries. Even the scantily versed in pharmaceutical studies must be convinced, by a comparison of the different British pharmacopœias with those of other states, whatever the eminence of these in science and civilisation, that nowhere hitherto has the progress of therapeutic knowledge been better judged and represented than in our realms, whether viewed as betokened by the gradual abandonment of the obsolete and the inert in form or in substance of our remedial means, or by the wary introduction of the new and the efficient. That discrepancies should arise through dissociation of procedure was unavoidable: yet there was a period when these, though always intrinsically to be regretted, produced really little practical inconvenience. Each division of the empire was so separate in itself by distance, as well as by sparseness and tardiness of communication, and by specialties of social condition

and government, that it for long mattered comparatively little how any subordinate part of the organization worked in relation to arrangements elsewhere, provided it was capable of efficient application within its own sphere.

But, when subsequently the complete union of the legislatures, with finally, and far more appreciably, that still closer union and intercommunication effected by steamboat, railway, and reduced postage, had drawn all compactly together into one social organization, inconveniences began to be keenly felt which before were scarcely perceptible. The inner movements had now grown everywhere so easy and rapid, that the patient, who had been prescribed for at Dublin or Edinburgh in the eve, could present himself to have his medicines compounded in London on the morrow; and so reciprocally for the whole. It could thus no longer rest a matter of unconcern that many medicinal preparations, even if comparatively of slight energy, should be found to differ in quality, and yet to correspond in name, in the several divisions of the empire: while there arose to be flagrant wrong and peril in the fact, that, with an identity of designation on the part of a few of the most powerful of our remedial agents, such as prussic acid, solution of muriate of morphia, infusion of foxglove, or vinegar of colchicum, all in frequent use, the difference in strength varied by at least a half; the excess being to be guarded against as occurring now in one pharmacopœia and now in another. Besides this, the weights used in the druggists' shops in Ireland were not those used in England and Scotland; and in the latter countries they were of two kinds, carrying ambiguous titles. The result of these anomalies was to create risks, and to impose responsibilities, which were daily becoming more intolerable and more extensive; and of which the profession, in the perfection of its own union, and in the faithfulness of its duty to the community, has at last done well to divest itself by what has been really its own act, approached at its own instigation. Nor should it be forgotten by the public that the several Colleges of Physicians, in proceeding spontaneously to suppress their own individual pharmacopœias, and in resigning cordially, as they have done, the duty of framing a sole national codex, destined to supersede their labours, into the hands of the General Medical Council, were divesting themselves of what had been hitherto not only their high and honourable privilege, but a source besides of considerable emolument; while it is equally just that it should be further known, that the profession, already so distinguished for the extent and liberality of its gratuitous service, has joined in this boon without demand or thought of compensation.

It would be interesting, did our space permit, to turn the event of passing from the old to the new arrangement into the opportunity for introducing a brief sketch of the history of the native pharmacopœias, showing their more essential modifications as they have been successively

London
Pharmacopœia.

adopted and issued by the Colleges in each of the divisions of the empire. The announcement of a few dates, however, with here and there an incidental fact or comment, is all that we can attempt. It appears to have been in 1585, or sixty-seven years after the foundation of the Royal College of Physicians of London, and forty-three years subsequent to the issue of the earliest legally sanctioned pharmacopœia on the Continent, that the English Corporation first seriously contemplated the publication of a pharmacopœia, carrying with it the stamp of their authority. Not till May 1618, nevertheless, or after the further lapse of thirty-three years, and at the close of a century of their corporate existence, was this design first carried into actual effect; having been considered, we shall hope, in that interval, with the circumspection becoming those who were justly conscious that the result of their completed task would be to mark an epoch in the science of their country. The work appeared in the form of a thin folio, now so scarce¹ that not even the library of the parent College is in possession of a copy. On the score of scientific interest, this scarcity of the first issue is fortunately no matter of special regret; in as much as it appears that, to meet the largeness of the demand, an exact reprint was published at the close of the same year, and of this reprint the College library possesses a copy. Indeed, there seem grounds for believing, that subsequently a like reprint was several times issued by the booksellers; and even the edition of 1627, designated as the third, appears still without modification of the general contents, or change of the designations of the College Fellows. Other authorized reprints, or editions, with which we are acquainted, followed in 1632, 1639, 1650, 1653, 1662, 1677, 1721, 1724, 1746, 1787, 1809, 1815, 1824, 1836, and 1851, each ranging itself on the level of the knowledge of its times; while translations and comments, the latter often characterized by much talent, crowded after in nearly commensurate abundance.

The establishment of a College of Physicians in Edinburgh, already contemplated in 1617, was not completed till 1681; when the design to frame and issue a pharmacopœia was not only almost immediately entertained, but in 1689 was all but carried into effect. "The fourth of December, 1684," says Sir Robert Sibbald, in his curious Autobiography (p. 34), "I was chosen President of the Royal Colledge of Physitians at Edinburgh. In the tyme I was President, our patent was ratified in Parliament. The Pharmacopœa Edinburgensis was composed, and licensed to be printed by the Chancellor, and the printer agreed to print it gratis, and give the College a competent number of copies, and take his hazard of vending the rest; but by the malice of some, it was laid aside for ten years thereafter." It would possibly

¹ At a book auction in Edinburgh (20th January 1862), the writer of these remarks failed in securing an example of this original edition by an offer of £3, 3s. It was in limp vellum, in fine condition, and bore the autograph of "Archibald Crawford, Apotecar."

be more just, as it would certainly be more charitable, to believe that the delay of the College was rather owing to that slowness and cautiousness in maturing their labour which seems neither a new nor an unbecoming trait in the history of such designs everywhere. At all events, it was not till 1699, or about eighteen years after the foundation of the College, that the work actually appeared. Other editions known to us, adapted to the several epochs with their successive forms of development of ideas and of practice, or sometimes mere reprints with modifications, were published in 1722, 1736, 1744, 1756, 1774, 1783, 1792, 1795, 1803, 1804, 1817, 1839, and 1841; so that the Edinburgh College, more especially when its circumscribed sphere of authority is taken into account, has the manifest merit of having displayed great zeal for a century and a-half in the discharge of this important part of its functions. But it is not likely to be forgotten, that in the publications of no other country has pharmaceutical science been represented with a fuller and a more judiciously critical knowledge than in the Lectures of Cullen, or in the Dispensatories of Duncan and Christison.

The career of the Dublin College, with reference
 Dublin to its pharmacopœia, has been comparatively brief,
 Pharmacopœia. and in some respects peculiar. Still, during the short space that its privileges under this head were exerted, it has been with a measure of energy and merit in no degree inferior to that displayed by either of the sister colleges. Instituted in 1667, the King's and Queen's College of Physicians of Ireland found the pharmacopœia of the London College already, and from circumstances naturally, in possession of a field which they seemed for long to hesitate to contest with it; and it does not appear to have been till 1784, or more than a century after their incorporation, that preparations were commenced for the institution of a separate codex. Possibly the College may have been incited to action at this period, through the circumstance that it was within two years of the time when the Irish Parliament obtained from that of Britain a distinct recognition of independent authority, in matters of internal legislation; a kind of emancipation of which they may not have stood in need for the purpose in question, yet in which they might be not unwilling to appear to share. It was not till 1807, nevertheless, or seven years after the Irish Parliament itself had been finally absorbed into the Imperial legislature, and a hundred and forty years from the period of the foundation of the College, that, with the customary destiny of a tardy execution, though after labours which had never been wholly laid aside, the Dublin pharmacopœia appeared, and assumed that place in its individual sphere which it has since so honourably and efficiently occupied. A second edition was issued in 1826, and the latest in 1850; this having been succeeded by a supplement in 1856, which brought the work to the level of the knowledge of that year. Thus, the last to enter upon the field, the Dublin College has also been the latest to occupy it with a fresh labour; and it now quits

it like the rest, having contributed its liberal share to that general store from which all are in future to derive a common advantage.

There is still a temptation to linger for a while among the old occupants of the field of British pharmacy, were it only to invite the reader to contrast shortly the scope and quality of the labour involved when the Colleges first assumed this special function, with those which had grown to be its characteristics ere they resigned it. When we regard the list of the *Materia Medica* that bears the original sanction of the London College, with its array of above 1000 simples, some grotesque, others barbarous, and many redundant or worthless, and place beside it that of 1851, with its fewer than 300, almost without exception, admirably chosen articles, we have alike in each the science of the day, but a science founded on widely divergent methods and principles. For long centuries it was the rule to have much mere learning, and little scepticism, or tradition rather than observation, and knowledge declined: we have now less mere learning, with more observation, and a keener scepticism, and knowledge advances. It is consolatory, meanwhile, to gather that, even in 1627, the repositories of the English apothecary may be said, with, in part at least, undeniable literalness, to have shown a less monstrous farrago of those

“ — stores of deleterious med’cines,
Which whosoever took is dead since,”

than were exhibited in those of other countries half a century later; for we observe that, in 1672, the heterogeneous articles directed by authority to be kept in the stock of the Danish and Norwegian pharmacutists amounted to no less than 3000 in number. Not less in remarkable contrast, are the appropriately and succinctly formulized preparations in the pharmacopeia of 1851, beside the complex and redundant medley in its early precursor, in which the simple waters alone number 180, while those compounded are nearly 30 in addition. As to such motley messes as the *Theriaca Andromachi*, it is a proof of the tenacity with which the public estimation clung to them, that, even in the eighteenth century, this prodigious jumble was still lauded for its virtues by writers of authority, and held, up to 1746, that space in the London pharmacopeia which now would suffice, not merely for a single Galenical, but for a whole comprehensive group. Among others of the early processes, we especially bring back to the recollection of the curious those for *Ustio hirundinum*, *Margaritæ*, *Sanquis hircinus*, and *Pulmones vulpis*, as peculiarly illustrating what we have lost, and what we have gained, in our processes of pharmacy, during the sway of the Colleges.

The earliest pharmacopeia of the Edinburgh College contrasts with its latest almost as strikingly as in the instance of the London College, though with so much more recent an origin as to render

the interval shorter by nearly a century. Its list of the *Materia Medica*, embracing about 900 articles, almost thrice outnumbers that of its last successor, and among the contents we have such now marvellous constituents as *Secundina humana*, fourteen different kinds of *stercus*¹ from which the human is not excluded, *urina pueri impuberis*, dried toads, whelps, earthworms, *cranium hominis violentâ morte extincti*, swallows' nests, and a host of others, only failing to be ludicrous in the proportion that they are revolting and loathsome. But we are not to imagine that the Edinburgh pharmacopœia was, in this respect, and at this period, more gross than its southern competitor; for all these monstrosities, with others, and worse, held their place in the London Pharmacopœia till a considerably later date. Among the Edinburgh preparations, those for the *Mithridatium Damocratis*, *Pulvis de Guttetâ*, *Oleum vulpinum*, *Emplastrum de ranis*, and *Aqua styptica*, remedies at that time in the highest vogue in both countries, will repay a brief attention, by affording at least the gratification that such monstrosities should have been for long² a part of the records of the past; though still not without their weighty lesson there, to all who may remain prone to rest their estimate of the worth of a remedy on merely the amount of current testimony in its favour.

The short history of the Dublin pharmacopœia, with its career alike begun and ended under the lights of modern science, presents us, of course, with no such contrasts between its extreme periods as those which impart singularity and interest to the labours of the

¹ Follies die slowly; and it is nearly universally amid the refuse of science that the *profanum vulgus* of the quackish and ignorant finds its resources. It has occurred to the writer to see, in the course of his practice, at least two kinds of *stercus* in use with the vulgar. The *stercus vaccinum* he has known to be applied frequently externally; and the *stercus ovillum* to be at least once taken internally, with alleged most beneficial effects. As another of his experiences, he may add that he has known concentrated *urina humana* used and lauded as an external application in *lupus*.

² The latest that we have seen of them in a national pharmacopœia is, perhaps naturally for the people, if singularly for the age, in the *Pharmacopœia Hispana* of 1817. Here we find still lingering, in the catalogue of the *materia medica*, such remedies as the *album Græcum*, toad, human skull, etc.; while the oils of scorpions, vipers, and earthworms, the ointment of earthworms, frogs' plaster, etc., rank among the preparations. And yet our Spanish brethren seem not to have suspected that their work was at all behind the science of their times, but announce it as framed "*con las correcciones que ha estimado convenientes segun el estado de progresos y adelantamientos que han recebido las ciencias naturales.*" But if a single national codex have been found slow to resign wholly this base class of remedies, certain of the homœopaths, strong in imposture, or weak in credulity, have been eager to revive them, in shapes of even filthier degradation. The "*Medicamenta homœopathica et isopathica*," published by Hager in 1861, has in its *balanorrhinum*, *cimex lecticularius*, *humaninum* (fæces), *otorrhinum*, *pneumoplthisinum*, etc., a store of abominations beyond the worst of the vilenesses of the middle ages. While writing this, we chance to notice the retention in the "*Pharmacopœe für das Kurfürstenthum Hessen*," published in 1862, of a *Spiritus formicarum* to be made with live ants.

sister institutions. It may serve, however, as an illustration of the condition of pharmacy in Ireland, in remoter times, that in 1566 we are told there was only a single apothecary in all that country, in the person of a Thomas Smyth of Dublin; and it appears from our authority for the statement, that it required a direct promise of no ordinary emolument from the State to retain even him, so slightly was his function then appreciated by the community.

Passing from these reminiscences, which we trust the nature of the occasion may have justified as not irrelevant, we proceed more immediately to the examination of the work before us. In organizing the labour for the new Pharmacopœia, the General Medical Council will be considered to have acted wisely in looking beyond their own body, for at least a portion of the ability and the experience that it was desirable to engage in the undertaking. A rule, which was to serve for a whole profession, should naturally be attempted to be constituted on the broadest basis that could be secured by a thorough representation of that profession. To effect this adequately, it was requisite, therefore, that not only those who prescribe medicines, but those who prepare and compound them, should be invited to bring their different forms of knowledge and experience to the task; while, as an indispensable addition, the aid of those who, whether as writers or teachers, had made the subject of pharmacology a special object of study, was of course to be accounted as of paramount value. With this view, then, besides selecting a portion of eminent physicians and surgeons as practitioners, and of university professors as specialists, from among its own number, the General Council judiciously took steps also for obtaining the assistance of others of competent skill and acquirements, in whatsoever of the associated departments: and these were sought for in our medical schools and Royal Colleges, or among our practitioners in each of the capitals, as well as in the Societies of Apothecaries of London and Dublin, and in the Pharmaceutical Society of Great Britain; a body which is effecting much for the progress of practical pharmacy in the country, and whose services on this occasion we know to have been esteemed as of signal merit and importance. Besides these, a few eminent practical authorities were nominated, to be held in reserve for consultation on any more abstruse point of chemical or botanical inquiry that might arise for determination. Thus amply and thoroughly organized, the Committee commenced its sittings at the close of 1858. It was found to be a necessary arrangement, that a divisional Committee should sit in each of the capitals; that in London being accounted as the centre, and its secretary, Dr Garrod, being the general secretary. The secretaries for the Edinburgh and Dublin branches were Dr Charles Wilson for the former, and Professor Williams, replaced by Dr Aquilla Smith, for the latter. Professor Christison presided over the aggregate body. It is to the united committee, thus constituted, that the public is indebted for

the whole arrangements as now completed, with the exception of the regulation of the system of weights; the General Council, while approving and sanctioning the work otherwise, having recalled their delegated authority merely in so far as to confine the metrology to their own direct ordering.

A first point in the re-construction of a pharmacopœia, especially where the process is, at the same time, one of amalgamation of several different pharmacopœias, must be naturally the consideration of what substances, if any, are to be shut out from the new lists, whether as simply redundant, or as of now out-rivalled or never justly acquired reputation. The determination of the articles to be thus suppressed was ruled, of course, in great part by the experience and judgment of the members of the committee themselves; yet was to be decided, in still greater part, according to the opinions prevalent in the profession, in as far as these were known or could be ascertained. As a preliminary step, lists of all the medicines in the three existing pharmacopœias were, through the instrumentality of the Pharmaceutical Society, circulated among the leading druggists in our principal towns, with the request that there should be marked after each article the degree in which it was found to be in demand, whether as very frequently, or only frequently, or as rarely, or very rarely, or never required in prescription. Returns of this kind were obtained from eighty of our chief druggists, and gave the best of accessible evidence as to the grades of practical estimation at which the different medicines were rated. The list thus formed having been scrutinized, it was judged, partly on the evidence obtained, and partly on other, and possibly more subjective, grounds, that the following articles, eighty-nine in number, in part existing previously in all, but, in a majority of instances, only in one or other of the lists to be superseded, as indicated by the initials, might be expediently excluded wholly from the catalogue of the materia medica of the new pharmacopœia:—

Absinthium (L. E. D.)
 Ærugo (L. E. D.)
 Alcohol (E. D.)
 Allium (E.)
 Aloe hepatica (L. E. D.)
 Althæa (L. E.)
 Amygdala amara (L. E.)
 Angelica (E.)
 Anisum (L. E. D.)
 Aurantii fructus (D.)
 ——— oleum (E. D.)
 Avena (L. E. D.)
 Barytæ carbonas (E. D.)
 ——— sulphas (E. D.)
 Bergamotæ oleum (E.)
 Calamina præparata (L. E.)
 Calamus aromaticus (E.)
 Canella (L. E. D.)
 Canna (E. D.)

Carota (L. E. D.)
 Cassiæ cortex (E.)
 ——— oleum (E.)
 Centaurium (E.)
 Chimaphila (L. D.)
 Cinchona cinerea (E. D.)
 Cornu (L. E.)
 ——— ustum (L.)
 Creta (E. D.)
 Curcuma (L. E.)
 Cydonium (L.)
 Cyminum (L. E.)
 Dolichos (L. E. D.)
 Euphorbium (E.)
 Farina (L. E. D.)
 Ferri limatura (E. D.)
 Ferrum in fila tractum (L. E. D.)
 Gossypium (E.)
 Granatum (L.)

Helleborus (L. E.)	Plumbi oxidum rubrum (E.)
Inula (L.)	Potassæ bichromas (D.)
Lacmus (E.)	Potassii ferrocyanidum (L. E. D.)
Lactuca sativa (L. D.)	Pyrethrum (L. E.)
—— virosa (E. D.)	Rhamni succus (L. E.)
Lactucarium (E. D.)	Rosæ oleum (E. D.)
Laurus (L.)	Sagapenum (L.)
Linum catharticum (E.)	Sago (L. E. D.)
Lupulina (D.)	Salix (E.)
Malva (E.)	Silex contritus (L.)
Manganesii peroxidum (L. E. D.)	Simaruba (E. D.)
Maranta (L. E. D.)	Spigelia (E.)
Marmor album (E. D.)	Spiritus vini Gallici (L.)
Melissa (E.)	Spongia (E.)
Mentha piperita (L. E. D.)	Stannum (E. D.)
—— Pulegium (L. E. D.)	Sthaphisagria (L. E.)
—— viridis (L. E. D.)	Succini oleum (D.)
Menyanthes (E.)	Tapioca (E. D.)
Origanum (E.)	Terebinthina Chia (L. E.)
Ossa (D.)	—— Veneta (E.)
Ovum (L. E. D.)	—— vulgaris (L.)
Panis (L.)	Tormentilla (L. E.)
Petroleum (L. E.)	Triticum (L. E. D.)
Phosphorus (L.)	Veratrum (L. E.)
Piper longum (L. E.)	Viola (L. E.)
Pix arida (L. E.)	Zincum (L. E. D.)

A survey of this list of expunged articles will with most, we have no doubt, suggest ample grounds to justify the expulsion. Some, indeed, may wish that the work of winnowing had been pursued still further: a few, on the other hand, will regret that the task of elimination had not still hesitated before some old familiars, on whose behalf, though seldom or never disturbed in their repositories, it seems difficult to forego a lingering predilection. To the desire of the one class we must oppose the sentiment of the other; reminding both that it is from the general and not from the individual judgment that a pharmacopœia must receive its standard. A portion of the articles, it should be remarked, including such as alcohol, ferrum in fila tractum, gossypium, lacmus, marmor album, potassæ bichromas, potassi ferrocyanidum, and zincum, are rather transferred than expunged; for they still appear in the appendix to the pharmacopœia, where, rendering no direct services to therapeutics, they are more appropriately ranked from their uses in pharmacy. Others, such as sago, tapioca, maranta, etc., are removed as having no peculiar place in the shop of the druggist, where they are not exclusively sought. Such medicines as carbonate of barytes will, like phosphorus, pass away unregretted from a position which neither of them has long occupied, and in which they have acquired no general confidence. From some of the more veteran, and once highly esteemed, remedies, however, it would perhaps be ungracious to take leave without less cursory remark.

Who, for instance, that loves to note the revolutions in the history of medical science, can be without some slight twinge of

compunction when he considers that with Absinthium, the herb of Artemisia Absinthium, passes away a celebrity for health-giving virtue as old as the dawn of medicine itself, and certainly one never wholly without title, from desert? We have its middle-age estimation displayed in quaint Henry Lyte, who, speaking with Dodoens, nearly three centuries ago, tells us, among its many other endowments, how good it was "against the windinesse and blastings of the belly, against the paynes and appetite to vomit, and the boyling up or wamblings of the stomacke;" not less than how it resisted all venom, and, if taken in the morning, "preserveth from drunkenness that day." The judicious Cullen, no worshipper of merely traditional reputations, assigns to it a better grounded, but still a high, merit, in those Lectures on the Materia Medica to which the Scottish school justly points as marking, if not creating, a leading epoch in our knowledge of the therapeutic qualities of drugs. Even the more solid portion of its reputation, however, has not secured it against the supremacy of later rivals, and it disappears now as overtopped and superfluous. Allium, the poor man's *theriaca* of Galen, and a remedy confided in by Sydenham, resigns its place on like grounds. As to the Marsh-mallow, we have, in its designation of *άλθαία*, a reminiscence of its early renown for universal wholesomeness; as well, doubtless, as a proof of the largeness of the faith of our predecessors; though latterly it has only been its still lingering popular favour, here and on the Continent, as a pectoral demulcent that has done somewhat to preserve it from entire oblivion. The Hellebores, white and black, celebrities, like Absinthium, coeval with the dawn of our science, after having gradually grown into discredit through their unmanageable virulence, have at last been wisely dismissed as to be remembered but not regarded. The Inula, our indigenous elecampane, another old inheritance, will be readily dispensed with; though we have occasionally known it to be still gathered by the rustic herbalist, under the belief, as with Lyte, that it "cleanseth the breast, ripeth tough flemc, and maketh it easie to be spit out." Linum catharticum, our mountain or purging flax, has been reputed with some to be an agreeable and effectual purgative, though others have described its action as harsh and drastic. It is, at all events, now never prescribed in this country, and has therefore been reasonably denied a place where it fails to be resorted to for a service. Neither has the Bog-bean, or Marsh-trefoil, succeeded in maintaining that reputation as an indigenous tonic which good authorities have asserted for it; and it also recedes accordingly. Salix, with its principle of Salicin, has probably been excluded, not only because it has really never been firmly established in practice, but because it could expect henceforward still less to sustain its credit as an antiperiodic and febrifuge, in the face of the success which is now attending the propagation by the Dutch in Java, and, in still more marked degree, by ourselves in Hindostan, of the more precious Cinchona, of which it

was designed as a surrogate. Tormentilla, though a good native astringent, has failed to hold a place in estimation beside the exotic catechu and kino, and has been withdrawn like the others as unappreciated and unused.

We have been the more particular in thus noting here the expulsion from the pharmacopœia of such herbs as Absinthium, Allium, Althæa, Linum, Menyanthes, and Tormentilla, to which might have still been added, as no despicable bitter, Centaurium, because, as plants of native growth, and nearly all of them of unquestionable efficacy, it seems, on a first consideration, to be matter of just regret that they should no longer hold a place in our national codex. Whether it be, in a great measure, caprice, that has abandoned the old favourites, and given vogue to their successors, and whether that caprice has, or has not, founded itself chiefly on the habitual proneness of the public to undervalue what is brought the most readily and the least pretentiously before it, it was not necessary, in as far as a pharmacopœia is concerned, to determine. Such a compendium, as it can stand only on the level of contemporary knowledge, seeks to indicate only the resources of contemporary practice. Its nature and its design do not admit of its striving to be in advance of either; while it ought to represent both truly at the time, and in their best guaranteed and perfected forms. We must be sometimes content if, with the fluctuations of opinion, we do not decline to a less worthy selection in the substitution of one remedial means for another, and thus leave a recognised therapeutic indication to be less adequately encountered. But this, we think, cannot be charged against the bulk of modern changes, in nearly all of which, rather, we seem justified in asserting a manifest gain. We have not, at the worst, to record any instance of recent mutability so flagrant, in relation to remedies whether of foreign or of home origin, as that mentioned by Gerard, when, writing in 1597, he tells us regarding the Golden rod (*Solidago virgaurea*), that in his remembrance it had been so prized as a vulnerary, that he had "knowne the dry herbe which came from beyond the sea sold in Bucklers Bury in London for halfe a crowne an ounce; but since it was found in Hampsteade wood, even as it were at our townes end, no man will give halfe a crowne for an hundred weight of it: which plainly setteth forth our inconstancie and sudden mutabilitie, esteeming no longer of any thing, how precious soever it be, than whilst it is strange and rare."¹ There is, indeed, little fear now of our being induced to abandon any really, and specifically, efficient medicine, such as *Digitalis*,² merely because its

¹ *Gerarde's Herball* (Ed. 1633), p. 430.

² It is noteworthy, how scantily the remarkable properties of Foxglove were known to our early herbalists. Turner can say nothing of it, unless that he had heard that the "hole herbe, brused a litle, and put betwene the horse saddle and his baek, is an excellent remedye against the farcye or fassones." (*Herbal*, 1563, Part III., p. 17.) Our other writers of the sixteenth and seventeenth centuries scarcely rate its virtues higher, or turn them to apter uses.

graceful flower-stalks nod to us from the sides of our own dells : just as our aconites and our belladonnas, in spite of whatever tendency to admire the exotic, will compel us to acknowledge that there are energies that can be ripened as intensely under our temperate skies as others that are seethed into strength beneath the scorching heat of the tropics. As to those we now part with, then, let us speak peace to their memory. It has at least been of more enduring quality than that of countless generations of physicians and patients, who have confided in their virtues, and have passed before them into oblivion.

The unserviceable or the superfluous among the old being set aside, those newer aids fall next to be considered, which medical practice, with more or less of common assent, may have judged fit to introduce into employment since the last preceding revisions of the *materia medica*. Of these, some may have been designed to fulfil an indication in treatment that has been newly conceived, or essentially modified ; while others have been directed as aids towards such as had been long recognised, but had been felt hitherto to have been coped with more or less imperfectly. In both cases, the framers of a pharmacopœia were to be guided by the degree and kind of general acceptance, in as far as it could be ascertained, with which the proposed novel agencies had been received : though, in the former case at least, it might be supposed that in certain, unquestionably rarely to be allowed, examples, the palpable nature of the freshly recognised want, with the peculiarly intrinsic quality of the proofs, and the clearness of their interpretation, might be allowed to compensate largely for what was still a defect in the universality of their acceptance ; leaving it to time, and to that accumulation of probabilities which in medicine takes the place of certainty, to mature a judgment the issue of which might be reasonably anticipated. On whatever plea accepted, the entirely new remedies, or those which were found formerly in none of our pharmacopœias, at least in their latest published editions, but which we observe are now introduced into the national codex, are thirty in number, and stand as follows :—

Acidum sulphurosum.
Aconitia.
Ammonia benzoas.
—— phosphas.
Arnica.
Berberia sulphas.
Bela.
Collodium.
Conii fructus.
Cusso.
Digitalinum.
Fel bovinum purificatum.
Ferri arsenias.
—— et Quiniæ citras.
—— perchloridi liquor.

Ferri phosphas.
Kamela.
Lithiæ carbonas.
—— citras.
Nectandra.
Podophyllum.
Podophylli resina.
Potassæ citras.
—— permanganas.
Potassii bromidum.
Santonica.
Santoninum.
Scammonia resina.
Soda caustica.
Sodæ arsenias.

**Partially New
Acquisitions.**

Besides these, in the sense we have stated, absolutely novel additions, the British Pharmacopœia adopts the following articles, thirty-one in number, which, though not holding a place in all of the superseded pharmacopœias, yet occurred previously in one or other of them, in the proportion that our subjoined list indicates through the initials appended. We print in *Italics*, for the greater distinctness, the small proportion of these that existed in the last Edinburgh list, pointing thus to the others, old familiars as they are, as fresh introductions in as far as Scotland is concerned; but leaving unreckoned, throughout, certain merely unessential diversities, in ascribed source or in quality, of drugs formerly adopted with general concurrence by all the Colleges:—

Acidum gallicum (L. D.)
 ——— phosphoricum dilutum (L.)
 ——— tannicum (L. D.)
 Antimonii terchloridi liquor (D.)
 Argenti oxidum (D.)
 Atropia (L.)
 Cannabis Indica (D.)
 Chloroformum (L. D.)
 Ferri et Ammoniaë citras (L. D.)
 ——— *iodidum* (E. D.)
 ——— *pernitrat*is liquor (D.)
 ——— *peroxidum hydratum* (E. D.)
 ——— *sulphas exsiccata* (E. D.)
 ——— ——— *granulata* (D.)
 Ferrum redactum (D.)
 Glycerinum (D.)

Hemidesmus (D.)
 Hydrargyri nitratis liquor acidus (D.)
Jalapœ resina (E.)
 Matica (D.)
 Morrhua oleum (L. D.)
 Potassæ chloras (L. D.)
Sabadilla (E.)
 Saccharum lactis (D.)
 Sodæ chloratæ liquor (L.)
 Spiritus pyroxylicus rectificatus (D.)
Terebinthina canadensis (E.)
 Ulmus (L.)
Veratria (L. E.)
 Zinci chloridum (L. D.)
 ——— valerianas (D.)

In surveying now the list of the wholly new introductions to our materia medica, it is easy to perceive that, while a few may object to certain of the acquisitions, either absolutely, or relatively to other drugs which the direction of their own experience would have led them to prefer, there may be others who will not only assent to all unexceptionally, but who would also desire to see others still added, in the virtues of which they themselves judge fit to bestow confidence. There was possibly no direction, in this view, more fitted to have proved fertile of suggestion than the experience of many regarding certain of the resources derivable from the medical practice of the States of North America, and already partially adopted in this country. Of these we may adduce, as examples from a larger number, *Prunus Virginiana*, *Veratrum viride*, and *Cicimifuga racemosa*. But of the two latter it may be said that, however enthusiastic some of their partisans, they have scarcely yet obtained here that amount of suffrages, or even of trial, which would have justified their being placed in the codex; and if the first have been tested by a longer probation, invited through its union of qualities appearing to carry along with them the promise of meeting competently a slightly complex and often encountered therapeutic indication, that promise has hardly been found to have been adequately

fulfilled. For our own part, it is now many years since a repeated trial of it failed to gain our confidence, and we were induced to lay it aside for a combination of hydrocyanic acid and infusion of Calumba, by which the aims it was expected to satisfy were so much the more effectually secured, that the relative proportions of tonic and sedative judged requisite could not only be far more nicely adjusted, but were of the more decided power in themselves. It is not a light matter, if by a resort to this kind of simple expedient a pharmacopœia can be saved from being overloaded with needless constituents.

Some, doubtless, may have desired to have seen pepsine placed beside *Fel bovinum*, as a somewhat analogous aid in the treatment of the manifold ills of dyspepsia: but there has been as yet, loud as have been its panegyrists, too much diversity and uncertainty in its constitution and modes of preparation, and too little, therefore, of justifiable reliance on its results, to sanction its introduction; though the lapse of time, before the publication of another edition, may give to it, as well as to other novelties, a less debateable position. There could not, meanwhile, be too much caution exercised in introducing new remedies, where there might be a fear that their vogue had been too hastily reached to be established safely; for it is an unseemly precipitancy that induces the risk of adopting an accession, however largely vaunted, if only in order to find it possibly sunk into neglect in a few short years, and requiring, sooner or later, the hand of the pruner to remove it from the rank it had been allowed to assume, but had proved no title to hold. Nothing in the world is easier than to propose, and, in a certain narrow sense, to try new remedies. All that is wanting is the given drug, and the patient on whom to make the experiment, whether or not with some plausible hypothesis to give speciousness to the attempt. But the philosophic spirit that brings its acumen and judgment to test without bias the experience thus obtained, is a comparatively rare commodity; and it is only through a long and painful scepticism that we arrive at the true knowledge of how far the action of a remedy, apart from other conditions and circumstances, aids or checks, perturbs or regulates, the progress of a disease towards its safe termination. Thus, if nothing be more easy than in an empirical way to interrogate nature, nothing is more difficult than to comprehend her answers. Hence it is that the history of all pharmacopœias, old or recent, shows us so many drugs at one time proposed, lauded, and adopted, to be at another time doubted, disparaged, and laid aside. The profession will not blame the caution that strives to limit the extent of this vacillation, though it be an achievement beyond the reach of human wisdom to prevent it wholly.

Yet, in using the term "vacillation," it is just to limit its applicability by remarking how rare are the examples in which a drug, once excluded from any of our pharmacopœias, has been again restored to its original place, or has been admitted of new into any

other of the native codices. Of this, however, we have now a noteworthy instance in the *Arnica montana*, the *Wohlverleih*, or health-bestower of the Germans, a designation which, through its vulgar corruption into *Wolferlei*, has been perverted into some fancied relation to the wolf. *Arnica*, as the "panacea lapsorum" of our old writers, long held a place in our pharmacopœias, originally with the view of being administered internally against the consequences of falls, and afterwards of being used, also internally, for its stimulating properties in a variety of asthenic or chronic affections. Having lost the specialties of its former uses and reputation, and so been dismissed from the lists, it has recently acquired favour anew in this country, yet chiefly now as an external discutient, with which view principally it seems to have been restored to the catalogue. But perhaps we should look upon the *Fel bovis* as another similar instance; for it too, with many other kinds of bile, long held a place in our old pharmacopœias, disappearing from them only during the last century, to be re-adopted now. *Aconitia*, also, was received as *Aconitina* in the London Pharmacopœia of 1836, to be displaced again in that of 1851; a fortune which it has shared with Bromide of Potassium. Both these substances re-appear now: and, as having been absent from all the latest pharmacopœias, have been classed by us, like *Arnica* and *Fel bovis*, among the new introductions; though, indeed, their history is still so much more recent, that they may rather be said to have been hitherto struggling for a reputation which they had not yet secured, than to have regained what had been previously won but had lapsed into abeyance.

At the commencement of the, more recent of the
Weights and Measures. often renewed aspirations of our legislature, to reach attainment of the stipulation in *Magna Charta* that there should be but one measure of wine, of corn, and of cloth for the whole realm, and that it should be with the weights as with the measures, it is well known that it was chiefly owing to the tenacity of the Royal College of Physicians of London that the completion of the attempt was thwarted, and that the Apothecaries' weights still continued to be legally (Act 5 and 6 William IV., c. 63, § 10) tolerated in our druggists' shops: for they were only tolerated, and were merely suffered to subsist under a permissive, and not imperative, clause of enactment. It was through a like tenacity, that the Troy system itself then escaped being at once, not only stripped of its authority as the standard, but universally abrogated, in order that the Avoirdupois system should be solely adopted as that "just and uniform" rule which the preamble of a former Act (5 Geo. IV., c. 74) declared to be necessary for the security of commerce and the good of the community. This is the better shown by its being on the part of an important department of the public service that the Troy system underwent its first directly legislative assault, when, by the Bullion Act (16 Vict., c. 29), it was ordained

that the Troy pound, and the grain, together with the other divisions below the ounce, should for the purposes of the Act be abrogated, and that multiples and decimal parts of the ounce should be substituted in their place. But a more absolute and complete warning of what must be the ultimate fate of the Troy system was given, when it was shortly afterwards effectually decreed (18 and 19 Vict., c. 72) that the imperial Avoirdupois pound should, instead of the Troy pound, be thenceforward the only standard measure of weight, from which all other weights, and other measures having reference to weight, should be derived: while, palpably because it was necessary that the community should have some collateral standard by which to estimate this pound, under the disqualification of the Troy pound, and beyond the essentially fundamental one which constituted it the weight of 27·727 cubic inches, or of the tenth part of a gallon, of distilled water, it was added that the Avoirdupois pound represented a weight of 7000 Troy grains; it being but the converse statement of this, that one equal seven-thousandth part of such pound Avoirdupois should be a grain, and 5760 such grains should be a pound Troy.

It was to assail the Troy system from a different direction, when, in 1850, the Dublin College of Physicians, influenced by many sound reasons which had long been impressing themselves on reflecting physicians and pharmacutists, adopted the Avoirdupois pound and ounce in their pharmacopœia, while still retaining the Troy grain as before, and associating with it a modification of the drachm and scruple. At the same time, they brought their system of measures for fluids into unity with those of the London and Edinburgh Colleges, who had successively, in 1836 and 1839, adopted the Imperial standard based on the Avoirdupois weight; and who had previously, in order to get rid of the uncertain and variable drop, adventured also on an innovation in the form of a last subdivision designated the minim, but which, having the same parallelism with the solid grain that the so-called fluid drachm had with the solid drachm, might as appropriately, or more conformably, have been termed the fluid grain. For, primarily, it may be remarked, neither fluid drachm nor fluid ounce is a measure, further than it represents a weight; and both are to us quantities of merely conventional adaptation, specially contrived for purposes of pharmacy, and used there on medical authority solely. In thus judiciously replacing the drop by the minim, or, as we prefer to term it, the fluid grain, the London College was only following closely for the fluids what was attempted by Saladin of Ascoli (*Compend. Aromatorium*, p. iii.) in the thirteenth century for the solids, when he advised an average for the variable grain of corn, then in use, to be adjusted, and fixed as a weight in lead, tin, or other metal, so that a uniform quantity might in this way be indicated and secured; and yet his laudable recommendation met with so leisurely a recognition that it was not fully adopted till more than three centuries after.

It was in this general condition of the Troy, or, more specifically, of the Apothecaries' system, that the Medical Council, acting here, as we have said, apart from the Pharmacopœia Committee, approached the subject of pharmaceutical metrology; and the result has been the determination that, while the measures for fluids shall remain according to their last arrangement, the former pound, ounce, drachm, and scruple shall, with reference to the weights, be abandoned, and be replaced by the Avoirdupois pound and ounce only, the grain, now altered in its relations, being left identical in value. We give, from the preface of the new Pharmacopœia, the series of the medical weights and measures as it is there represented:—

WEIGHTS.

1 pound	. . lb.	=	16 ounces	=	7000 grains.
1 ounce	. . oz.	=		=	437·5 grains.
1 grain	. . gr.	=		=	1 grain.

MEASURES.

1 gallon	. . C.	=	8 pints		O viij.
1 pint	. . O.	=	20 fluid ounces	. . fl. oz.	xx.
1 fluid ounce	. fl. oz.	=	8 fluid drachms	. fl. drs.	vijj.
1 fluid drachm	. fl. dr.	=	60 minims	. . . min.	lx.
1 minim	. . min.	=	1 minim	. . . min.	j.

Manifestly, we may read in this arrangement, and in the general conditions which have preceded it and led the way to its adoption, the final doom of the Troy system everywhere, and can henceforward only look to its more or less speedily approaching utter extinction. Stripped of the grain, and of all but the ounce, with its decimal multiples and sub-multiples, for convenience and expedition in important departments of business immediately related to the State, and stripped of all beyond the grain by the authorities in our own immediate profession, it presents already only disjointed and crumbling, and curiously incongruous relics in what were its former most influential spheres of employment, and it endures nowhere as a whole unless in the shops of the silversmiths. But it may be said that the grain, rejected in one eminent quarter, to be maintained in isolation in another, has security for its permanence somewhere, and in some quality or condition, from its title as an imperial denomination of weight. What, however, is the true worth of this title, irrespective of all direct relation to the system of which the grain in question was primarily a part, may be easily illustrated. When, in the year VIII. of the French Republic, the original ordinance for the metrical system was passed, it was with a prevision necessary in every respect, and peculiarly necessary for the many who could have but a vague notion of the relation of a weight to a forty-millionth part of the circle of the meridian, that the kilogramme had its value fixed by law at $18,227\frac{1}{5}$ grains of poids de marc; just as the metre too was declared to represent 3 feet and $11\frac{1}{100}$ lines of the old Paris standard. But not by this was the Paris foot, or the grain of the poids de marc, rendered any constituent

part of the new system, nor was either in any degree capable of being so rendered; just as little as the Troy grain, though it might abstractly, and from its old position, be dignified as the imperial grain, could, beyond in a similar way showing a relation and fixing a value, be employed as a constituent of the Avoirdupois system, because of no inferior denomination or subdivision of that system does it form an aliquot part. To force it to do so is, under any just comprehension of the nature and capabilities of a system, as much beyond the power of an Act of Parliament as it would be for that very august, but not always very logical body to constrain black and white into identity, though it might in its wisdom ordain us to confound their titles. The truth is, then, that, for the time being, the Avoirdupois system possesses intrinsically no grain, and the question arises how far it is desirable that it should acquire one.

Doubtless, in determining upon the more compendious than really simple arrangement of the weights which it has here adopted, the Medical Council has been influenced solely by the desire of reconciling, in the best way that appeared attainable, the habits and predilections of the profession with those growing exigencies which had, indeed, never wholly failed to press upon pharmaceutical practice, but which, under newer conjunctures, had recently acquired a force that it was no longer possible to overlook. Yet we cannot but admit that, in disturbing, without wholly passing from, the old relations, part of the happy pliancy and applicability of the plan of our predecessors has been disadvantageously abandoned. We repeat but a truism when we state, that no weight is a proper weight, or performs the required function of a weight, which does not, besides standing for an absolute quantity in itself, express an easily ascertained proportion in relation to other denominations of weights in its assumed system. Let us inquire, then, what portion of the new ounce any given number of the old grains will constitute; and this is a question which must often be asked, and ought always to be readily answered, even did the necessity for ease and correctness of computation raise no higher consideration than for an equitable adjustment of price, and import nothing besides in the framing or compounding of whatever class of prescriptions. With the former ounce of 480 grains by weight, as with that still sanctioned of 480 minims by measure, the fundamental quantity was freely divisible and subdivisible into unfractional parts, by the familiar half, or quarter, or by the scarcely less customary duodecimal division. Its whole, with its chief parts, could also be divided on the instant by 10; and the same was nearly equally true with regard to any of the primary numbers, 7 and 9 being the sole exceptions. The results thus obtained constituting, in every instance, integral parts, their own intrinsic values, and their proportions to each other, and to the fundamental quantity, were at once clearly discernible. But the new ounce of $437\frac{1}{2}$ grains is divisible into integral parts by nothing whatever. The grain,

once, in its relation to the ounce, a 480th integral portion, is now only expressible as a fraction of 2-875ths of one ounce; or, if that shall seem more nearly to individualize it, of 1-875th of two ounces. The frequently convenient, and always easily remembered, quantity of 10 grains, the disentitled half-scruple, had formerly its easily conceivable relation of 1-48th of the ounce: now it is 1-43 $\frac{3}{4}$ th. The scruple of 20 grains, once 1-24th of the ounce, when no longer to be called the scruple, assumes, as 20 grains, its place of 1-21 $\frac{1}{8}$ th of the ounce. And so the old, almost immemorial, drachm of 60 grains had its instantly cognizable relation of 1-8th of the ounce; but, disembodied now, and merely as 60 grains, it puzzles us as its 1-7 $\frac{7}{8}$ th. Similar intricacies of relation could be shown with almost every variety of denomination of quantity; and they must infallibly arise in practice, to the occasional discomfiture of the prescriber, and still more of the compounder. That the drachm has been retained for the fluids, while abrogated for the solids, may probably have arisen merely from the desire to save an existing arrangement from needless interference; though possibly there may have been, beyond this, some belief of its real usefulness. Under any other consideration, there could have been no greater inconvenience in expressing all the quantities, below an ounce, in liquids by minims, than in solids by grains. Indeed, the inconvenience would have been far less: because the half-ounce and quarter-ounce, and even the eighth of the ounce, which, in either instance, must inevitably suggest themselves, and already in the new pharmacopœia are suggesting themselves, as the virtual substitutes for the old subdivision, would, with the liquids, have been at least aliquot parts of 240, 120, and 60 minims respectively; while, with the solids, they appear as representing, and that not always exactly, the perplexing fractional quantities of 218 $\frac{3}{4}$, 109 $\frac{3}{8}$, and 54 $\frac{6}{16}$ grains.

These are material defects. They have never occurred in anything styling itself a system of weights before. They mark the entanglements that were necessarily in store for any one, who, determined to adopt the Avoirdupois ounce, had predetermined not to relinquish the Troy grain. But the medical mind in such matters is not inflexible: it is merely not volatile. That the profession gave up first its arrangement of measures to meet the general standard of the country, and that it has now, in like approach to unity and integration of weights, given up all of its Troy system but the grain, proves that, though not unnaturally reluctant, and therefore tardy, with regard to both, it looked only for conviction in order to turn from its beaten paths, when these were found to diverge inconveniently from others more extensively trodden. To modify the grain itself, as it would be the last, so also it would be the least of the changes which have been required of it, and to which it has acceded; and the process demanded is no unprecedented one, for it is precisely analogous with that by which, under the guidance of the London College, the minim, or the fluid

grain, as we have shown it might have been more congruously designated (and as, indeed, by the Dublin College in 1826, it has been designated), was rendered a determinate and integral part of the fluid measures. The result would then be, that the fluid grain and the solid grain, each of them based on an identical ponderable amount of distilled water, would be of identical value, and the weights and measures, in themselves, and towards each other, would be brought into entire consistency and harmony accordingly. In any event, so obvious must become the propriety and advantages of this, that it seems now certain that the national legislature, foreseeing the extinction of the tiny shred that is thus alone left of that Troy system which ruled so long our customary use, though never in more than exceptional use itself, will judge fit authoritatively to constitute a grain which shall be a properly integral part of the avoirdupois, or now exclusively imperial, system; or rather will reconstitute such a grain, for it existed ages ago, and dropped only into abeyance towards the beginning of the last century. The absence of such an ultimate subdivision was a defect which men saw no necessity for supplying, while the Troy standard was dominant, and the avoirdupois system was used only for our grosser traffic; but now, when matters are in so far reversed, and the former standard, having been legislatively superseded, is becoming fragmentary or is falling into disuse, a true avoirdupois grain is a matter of absolute essentiality, not less in practice than by rule of science. It may be a consideration worth adding, that the grain thus constituted as an aliquot part of the avoirdupois system, so far from being an aberrant grain, will be nearer the mean of the medical grain throughout Europe than the present Troy grain, the deviation being only by a fiftieth instead of a tenth part. Possibly, however, the knot may be wholly cut by the adoption nationally of the metrical system; or, as many would prefer, of a decimal system based on our already existing standards. In either of the latter cases, if we ought to be ready to welcome a system excellent for calculations and accounts, we must be prepared also to find one less convenient, in a variety of respects, for the actual uses of every day life, where weights are only the instruments for commodious barter: while the metrical system, besides, by transforming our conceptions in everything, from our Ordnance Survey to the meanest retailer's traffic, will long shock with peculiar irksomeness on our notions, language, and habits. Perhaps it may not be judged a policy of altogether unmingled wisdom, that will make our commonest transactions permanently more difficult to the many, with a view to render their mere record, along with that of the far less numerous and less complex relations of our foreign commerce, eventually easier to the few; or that will refuse to admit, if a radical change be really advisable, that a decimal system, based on our old standards, may not be found to accord best with our past history, as well as with our present economy and wants.

In the arrangement of the British Pharmacopœia, we have, after a preface containing certain necessary preliminary explanations, first, a list of the *materia medica*, in alphabetical order, including all directly designated substances to be kept for immediate remedial uses in our laboratories. For each of the consecutive articles in this list, we have first the name by which it is to be denoted in prescriptions, followed always by the English equivalent, and, where advisable, by its synonymes; with an indication of its source, if a plant, and its symbol, if a chemical compound. We have then, where required, a brief definition, and an intimation of the quarter from which it reaches us in commerce. To this succeeds an exposition of those characters which give the means of proving in so far its genuineness, by distinguishing it from all other substances; as well as of those tests which, as designed to try its strength and purity, are only requisite where there may be risk, and therefore suspicion, of defect or adulteration. Lastly, the preparations are enumerated, or the processes are referred to, into which the substance enters as a constituent. The whole details are given in our vernacular. It will be observed with satisfaction that, as the kind of exact discrimination that is supplied here between what is the proper intention of a character and that of a test is a novelty, at least in as far as an equally methodized application is concerned, that is peculiar to the present pharmacopœia, so it manifestly constitutes a material improvement, owing to the facilities it provides for adaptation to practical uses. The competent observer will remark, at the same time, how many significant facts have been originally introduced here, and how many judicious and important modifications have been adopted. To these, we wish that our space permitted us to refer more closely; although, naturally, a large proportion of them are such as are only fitted to recommend themselves adequately amid the actual business of the laboratory, and to a trial there we may venture confidently to commit them.

Where there are changes in nomenclature in the lists of the British Pharmacopœia, they appear to be the results of the adoption of certain general rules, the propriety of which, we think, will not be questioned. Thus, for example, where a medicinal substance ranks among the alkaloids, or is capable, as such, of forming the base of a more or less perfectly constituted salt, its latinized designation is uniformly that of a feminine noun, ending in *ia*; so that what was formerly *Aconitina* becomes *Aconitia*, as *Quina* becomes *Quinia*, both falling under the same rule with *Atropia*, *Strychnia*, and *Morphia*. On the other hand, where the active constituent of a drug is not of a proved alkaline quality, but bears the character of a vegetable principle, its termination is that of a neuter noun in *um*, and we have *Digitalinum* and *Santoninum*. In the chemical compounds, wherever there is any doubt as to the precise constitution of the combination, the designation has that vagueness which befits the uncertainty of the theo-

retical view; and for Potassii sulphuretum, for instance, we have Potassa sulphurata, just as for Potassæ bitartas we have Potassæ tartas acida, or for Plumbi diacetas, Plumbi subacetas. Still more, where in this way there might arise practical danger of misnaming and confounding chemical substances of more or less highly energetic properties, regard has been paid rather to the securing of the public safety than to the marking of a bias towards one or other mode of solution of a chemical problem; and Hydrargyri bichloridum falls back, in favour of long usage, to its old title of Hydrargyri sublimatum corrosivum, like Hydrargyri chloridum to that of Calomel, without further heed to the theory of their atomic constitution than is given, on like grounds of precaution, to Hydrargyri biniodidum and iodidum, which are to be prescribed by their respective synonyms of Hydrargyri iodidum rubrum, and Hydrargyri iodidum viride. In conformity with what is becoming the prevailing rule among chemists, Chlorinium has been now changed to Chlorum, and Iodinium to Iodum, while the latinized adjectival terms derivable from either have been partly modified accordingly; although in English *Chlorine* and *chlorinated* have been still retained, instead of being reduced to *Chlor* and *chlorated*, as they might have been according to a stricter derivation and analogy which may possibly acquire cogency at an after period. It will be noted, with reference to the specific names of the salts, that, instead of being regarded as neuter according to what has hitherto been the rule with the Edinburgh and Dublin Colleges, and with an associated short penult throughout their inflections, they are now entered as feminine, and have thus their penult in the inflections long, as in the former London pharmacopœia. By the way, we grudge that the designation of Aloe Socotorina, as it is written by authorities abroad, and as Camoens¹ wrote it three centuries back, should appear clipped as Socotrina; though we are aware that even for the viler Succotrina a warrant of precedent can be given. As another trifling consideration, we have been at a loss to gather why *fusel*, the *schlecht branntwein* of the Germans, and its oil, should appear in the appendix as *fousel*, and have been puzzling ourselves how it is to be pronounced.

With regard to the Galenicals, it has been ruled in the pharmacopœia, though old wont has prompted the tolerance of one or two exceptions, that no preparation is designable as a compound, merely on the score of its containing a plurality of ingredients, if applied only as corrigents or as giving form; but exclusively where there is a union of constituents each possessing directly active properties. We shall not advert, under the present head, to such changes of nomenclature as where a vegetable drug is assigned to some new botanical source; or is referred to one the identity of which remains the same, but whose systematic place and title have been altered. Thus Scoparius, the source of which was in our days of early prac-

¹ "Socotorá, co'o amaro Aloe famosa."—*Os Lusíadas*, x. 137.

tice referred to as a *Spartium*, after becoming more recently a *Cytisus*, is now a *Sarothamnus*; with that plague of variability, we are tempted to add, which in all the departments of medical science, and in some with far less justification than in Botany, burdens and perplexes the memory, entailing a labour whose imposition can only be excused where the result is to clear up a real obscurity or to remove an error. The Pill of Opium, we remark, is now wisely named only by its ungarbled designation; the disguises of *Pilula Thebaica*, or of *Pilula Saponis*, or *Styracis*, being properly discarded, that there may be no charge of risk of mischance, either here or in other instances, through assigning an apparently innocuous character to a powerful compound. With these explanations, the changes, or, sometimes, the fixations of designation which have been judged requisite in the new Pharmacopœia, of the chief of which we subjoin a list, will be more readily appreciated.

Recent Name.	Present Name.
Acidum muriaticum.....	Acidum hydrochloricum.
— nitro-muriaticum (D.)	— nitro-hydrochloricum dilutum.
Aconitina.....	Aconitia.
Æther sulphuricus	Æther.
Ammoniae sesquicarbonas.....	Ammoniae carbonas.
Antimonii sulphuretum.....	Antimonium sulphuratum.
— potassio-tartras.....	— tartaratum.
Arsenicum album	Acidum arseniosum.
Axungia.....	Adeps præparatus.
Balsamum Canadense	Terebinthina Canadensis.
Bismuthi nitras (L.).....	Bismuthum album.
Calx chlorinata	Calx chlorata.
Chiretta.....	Chirata.
Chlorinium	Chlorum.
Chloroformyl.....	Chloroformum.
Confectio Amygdalæ.....	Pulvis Amygdalæ compositus.
— aromatica.....	— Cretæ aromaticus.
Emplastrum Plumbi.....	Emplastrum Lithargyri.
Enema foetidum	Enema Assafetidæ.
— catharticum.....	— Magnesiae sulphatis.
Ferri ammonio-citras.....	Ferri et Ammoniae citras.
— oxidum nigrum.....	— oxidum magneticum.
— potassio-tartras.....	Ferrum tartaratum.
— pulvis	— redactum.
Glycerina.....	Glycerinum.
Hydrargyri ammonio-chloridum	Hydrargyrum ammoniatum.
— bichloridum	Hydrargyri sublimatum corrosivum.
— chloridum.....	Calomel.
— biniodidum	Hydrargyri iodidum rubrum.
— iodidum	— viride.
— nitrico-oxidum.....	Hydrargyri oxidum rubrum.
Infusum Buchu.....	Infusum Bucco.
— Cinchonæ spissatum (L.).....	Extractum Cinchonæ flavæ liquidum.
— Rosæ compositum.....	Infusum Rosæ acidum.
— Sennæ	— Sennæ.
Iodinium.....	Iodum.
Liquor Calcis chlorinatæ	Liquor Calcis chloratæ.
— Chlorinii	— Chlori.

Recent Name.	Present Name.
Liquor Plumbi diacetatis	Liquor Plumbi subacetatis.
— Sodæ chlorinatæ.....	— Sodæ chloratæ.
Magnesiae carbonas ponderosum (D.).	Magnesiae carbonas.
Mistura Acaciæ	Mucilago Acaciæ.
— Camphoræ.....	Aqua Camphoræ.
Morphiæ muriæ.....	Morphiæ hydrochloras.
Oleum Terebinthinæ purificatum	Oleum terebinthinæ.
Oxymel.....	Mel Aceti.
Pilula Saponis composita	Pilula Opii.
Plumbi oxidum.....	Lithargyrum.
Potassæ bitartas	Potassæ tartas acida.
— hydras.....	Potassa caustica.
Potassii sulphuretum.....	— sulphurata.
Pulvis Cretæ compositus.....	Pulvis Cretæ aromaticus.
— Ipecacuanhæ compositus	— Ipecacuanhæ cum Opio.
— Kino compositus.....	— Kino cum Opio.
Quina.....	Quinia.
Quinæ disulphas.....	Quinæ sulphas.
Sacchari Fæx.....	Theriaca.
Sodæ biboras.....	Borax.
Spiritus Ætheris nitrici.....	Spiritus Ætheris nitrosi.
Tinctura Ferri sesquichloridi	} Tinctura Ferri perchloridi.
— muriatis.....	
— Iodinii	} Tinctura Iodi.
— comp.....	
— Opii camphorata (E. D.).....	} Tinctura Camphoræ cum Opio.
— Camphoræ composita (L.).....	
Unguentum citrinum.....	Unguentum Hydrargyri nitratis.
Vinum Antimonii potassio-tartratis ..	Vinum antimoniale.

The arrangement adopted for the Galenical preparations and for the processes of pharmacy is, like that for the materia medica, in the main alphabetical; yet still with an accessory classification which brings together, in a subordinate sequence, those groups of compounds that have a specific relation to each other, whether by base or form, as the preparations of iron or mercury on the one hand, or the tinctures, ointments, etc., on the other. This plan, new in our pharmacopœias, but adopted in some of those of the Continent, has the merit of favouring easy reference; while it does not, like the method formerly pursued by our Colleges, lead to gathering arbitrarily within sections articles sometimes slightly or doubtfully allied to each other, in order to avoid for them what would have appeared otherwise all the awkwardness of isolation. It is by a principle in the arrangement, that many articles already enrolled in the first portion of the pharmacopœia are included in the second also: but we are to refer to the latter part only for their mode of preparation, in cases where a formula was required, leaving all needful information besides to be supplied in the other department. Not one of the processes, we may confidently believe, has been allowed to assume its place without reiterated trial and scrutiny; for we find that, whether in general rule or individual example, the modifications have not only been numerous and important, but bear the impress of careful

handling. One inevitable necessity for modifying the proportions of preparations, lay in the already alluded to disparity in the strengths of certain forms of medicines, in extensive use and of energetic properties, previously existing in the different divisions of the empire. If there was manifestly a risk of error for the dispenser in the old diversity, it is equally manifest that there might arise now some risk for the prescriber under the new uniformity, requiring care until use had made the change familiar. We are gratified to observe, meanwhile, that this description of risk has by no means been overlooked by the framers of the Pharmacopœia, who, on the contrary, have effectually assisted wariness by noting, in the first place, every important alteration in immediate connexion with its subject, and by providing, in the second place, a still ampler security in the rule that the weakest of the previous forms should be unvaryingly adopted instead of those stronger, so that error might verge rather towards inefficiency than danger. It is with analogous aim, though necessarily without an equally complete success, that an attempt has been made to do away with the discrepancies, so cumbersome to the memory, in the doses of different medicines, when prescribed under similarity of Galenical form. Thus, with the more powerful tinctures, their strength has been, for the most part, so adjusted that their mean dose may range from fifteen to twenty-five minims; while with those of less energetic agency it remains, as before, at from one fluid drachm to twice that quantity. In compounding all the formulæ, the proportions are to be determined, as hitherto, by weight and measure, and are nowhere directed in parts, a mode which some might have deemed preferable. But, indeed, the reduction of a formula into parts is, as a general law, only properly accordant with a decimal system of metrology, and is not always without its anomalies and embarrassments there. We assent willingly to the wisdom of the decision, which has retained a number of chemical processes among the preparations and compounds of the codex, although of such a nature as, under modern relations, to fall more readily and habitually within the province of the chemical manufacturer than of the mere pharmacist. It was right that a method should appear, ruled by the profession itself, according to which the material required could be supplied in essential purity: though manufacturers might not the less be free to have recourse to other methods judged by them more convenient or economical, provided only that the degree of purity and genuineness referable to the standard should be secured in the result.

With regard to the individual preparations, the first to require attention are those which occurred with a near identity of title and composition in the whole, or in one or other, of the recent pharmacopœias, and which have now, as superfluous or unsuitable, been laid aside, many of them necessarily along with their fundamental ingredients. They make up the following lengthened series:—

Discarded
Preparations.

- Acetum Cantharidis (L. E. D.)
 ——— Colchici (L. E. D.)
 ——— Opii (E. D.)
 ——— Scillæ (L. E. D.)
 Acidum aceticum camphoratum (E. D.)
 Ammoniacum præparatum (L.)
 Aqua Anisi (D.)
 ——— Cassiæ (E.)
 ——— Menthæ Pulegii (L. E. D.)
 ——— Potassæ effervescens (E.)
 ——— Sodæ ——— (E.)
 Assafoetida præparata (L.)
 Atropiæ sulphas (L.)
 Barii chloridum (L. E. D.)
 Calcis murias (E. D.)
 Cassia præparata (L.)
 Confectio aromatica (L. E. D.)
 ——— Aurantii (L. E.)
 ——— Cassiæ (L.)
 ——— Catechu composita (E. D.)
 ——— Opii (L. E.)
 ——— Rutæ (L.)
 Cupri ammonio-sulphas (L. E. D.)
 ——— subacetas (L. E. D.)
 Decoctum Chimaphilæ (L. D.)
 ——— Cinchonæ pallidæ (L. D.)
 ——— ——— rubræ (L. E.)
 ——— Cydonii (L.)
 ——— Dulcamaræ (L. E. D.)
 ——— Gallæ (L.)
 ——— Granati (L.)
 ——— Guaiaci (E.)
 ——— Hordei compositum (L.)
 ——— Lini ——— (D.)
 ——— Mezerei (E.)
 ——— Myrrhæ (D.)
 ——— Scoparii compositum (L. E.)
 ——— Senegæ (L.)
 ——— Ulmi (L.)
 ——— Uvæ Ursi (L. D.)
 Emplastrum Ammoniæ (L. E. D.)
 ——— Assafoetidæ (E.)
 ——— Cantharidis compositum (E.)
 ——— Cumini (L.)
 ——— Potassii Iodidi (L.)
 ——— Simplex (E.)
 Enema Colocynthis (L.)
 Essentiæ (D.)
 Extractum Aloes aquosum (D.)
 ——— Colocynthis (L. E.)
 ——— Digitalis (E.)
 ——— Lactucæ (L.)
 ——— Papaveris (L. E.)
 ——— Pareiræ (L. E.)
 ——— Scammonii (E.)
 ——— Styrcis (L. E.)
 Extractum Uvæ Ursi (L.)
 Ferri ammonio-chloridum (L.)
 ——— valerianæ (D.)
 Hydrargyri bisulphuretum (E. D.)
 ——— sulphas (D.)
 Hydrargyrum cum Magnesia (D.)
 Infusum Armoraciæ compositum (L.)
 ——— Cinchonæ pallidæ (E.)
 ——— ——— rubræ (E.)
 ——— Juniperi (D.)
 ——— Menthæ viridis (D.)
 ——— Pareiræ (E. D.)
 ——— Simarubæ (E. D.)
 Linimentum Æruginis (L.)
 ——— Ammoniæ compositum (E.)
 ——— ——— sesqui-carbonatis (L.)
 ——— ——— Simplex (E.)
 Liquor Aluminis compositus (L.)
 ——— Ammoniæ citratis (L.)
 ——— ——— sesqui-carbonatis (L. E.)
 ——— Arsenici chloridi (L.)
 ——— ——— et Hydrargyri hydriodatis (D.)
 ——— Barii chloridi (L. E. D.)
 ——— Calcii chloridi (E. D.)
 ——— Cupri ammonio-sulphatis (L. E.)
 ——— Hydrargyri bichloridi (L.)
 ——— Morphæ acetatis (L. D.)
 ——— Potassæ carbonatis (L. D.)
 ——— Potassii iodidi compositus (L. E. D.)
 ——— Sodæ carbonatis (D.)
 ——— Zinci chloridi (D.)
 Mel Rosæ (L. E.)
 Mistura Althææ (E.)
 ——— Camphoræ (E.)
 ——— ——— cum magnesia (E.)
 ——— Ferri aromatica (D.)
 ——— Gentianæ composita (L.)
 ——— Hordei (L.)
 ——— Spiritus vini Gallici (L.)
 Morphia (D.)
 Morphæ acetas (L. E. D.)
 Oleum Æthereum (L.)
 Oxy-mel Scillæ (L.)
 Pilula Aloes et Ferri (E.)
 ——— ——— composita (L. D.)
 ——— ——— cum sapone (L.)
 ——— Calomelanos et Opii (E.)
 ——— Conii composita (L.)
 ——— Cupri ammoniati (E.)
 ——— Digitalis et Scillæ (E.)
 ——— Ferri composita (L.)
 ——— ——— sulphatis (E.)
 ——— Galbani composita (L.)

Pilula Ipecacuanhæ et Opii (E.)
 ————— cum Scilla (L.)
 ————— Rhei (E.)
 ————— et Ferri (E.)
 ————— Styrcis composita (L. E.)
 Plumbi iodidum (L. E. D.)
 ————— nitræ (E. D.)
 Potassæ cum calce (L. E. D.)
 Potassæ bisulphas (E. D.)
 ————— sulphas cum sulphure (E.)
 Prunum præparatum (L.)
 Pulveres effervescentes (E. D.)
 Pulvis Aloes compositus (L.)
 ————— Aluminis ————— (E.)
 ————— Salinus ————— (E.)
 ————— Stanni (E. D.)
 Quinæ murias (D.)
 ————— valerianas (D.)
 Sagapenum præparatum (L.)
 Sodæ acetæ (D.)
 ————— sulphas (L. E. D.)
 ————— valerianas (D.)
 Spiritus Ætheris compositus (L. D.)
 ————— Ammonia (E.)
 ————— foetidus (L. E. D.)
 ————— Anisi (L.)
 ————— Carui (L. E.)
 ————— Cassia (E.)
 ————— Cinnamomi (L. E.)
 ————— Menthæ viridis (L.)
 ————— Pimentæ (L. E.)
 ————— Pulegii (L.)
 Strychninæ murias (D.)
 Sulphuris iodidum (L. D.)
 Syrupus Aceti (E.)
 ————— Acidi citrici (D.)
 ————— Althææ (L. E.)
 ————— Cocci (L.)
 ————— Croci (L. E. D.)
 ————— Ipecacuanhæ (E.)
 ————— Morphiæ acetatis (D.)
 ————— ————— muriatis (D.)
 ————— Rhamni (L. E.)
 ————— Sarsæ (L. E.)
 ————— Violæ (L. E.)
 Tamarindus præparatus (L.)
 Thus præparatum (L.)
 Tinctura Aloes composita (L. E.)
 ————— Ammonia ————— (L.)
 ————— Cardamomi (E.)

Tinctura Cassia (E.)
 ————— Castorei ammoniata (E.)
 ————— Cinchonæ pallidæ (L. E. D.)
 ————— Cinnamomi composita (L. E. D.)
 ————— Colchici ————— (L.)
 ————— Conii (L. E.)
 ————— Cubebæ (L. D.)
 ————— Cuspariæ (E.)
 ————— Ergotæ æthereæ (L.)
 ————— Ferri acetatis (D.)
 ————— ————— ammonio-chloridi (L.)
 ————— Guaiaci (E. D.)
 ————— Hellebori (L.)
 ————— Iodinei (E.)
 ————— Lactucarii (E.)
 ————— Matico (D.)
 ————— Opii ammoniata (E.)
 ————— Quassia (E.)
 ————— ————— composita (E.)
 ————— Rhei et Aloes (E.)
 ————— ————— Gentianæ (E.)
 Trochisci Acaciæ (E.)
 ————— Acidi tartarici (E.)
 ————— Cretæ (E.)
 ————— Glycyrrhizæ (E.)
 ————— Lactucarii (E.)
 ————— Magnesiæ (E.)
 ————— Sodæ bicarbonatis (E.)
 Unguentum Æruginis (E. D.)
 ————— Cera albæ (D.)
 ————— Conii (L.)
 ————— Hydrargyri iodidi (L.)
 ————— ————— nitratis mitius (L.)
 ————— ————— Infusi Cantharidis (E.)
 ————— Opii (L.)
 ————— Picis (L.)
 ————— ————— liquidæ (L. E. D.)
 ————— Plumbi acetatis (E. D.)
 ————— ————— compositum (L.)
 ————— ————— iodidi (L. D.)
 ————— Sambuci (L.)
 ————— Sulphuris compositum (L.)
 ————— ————— iodidum (L.)
 Vinum Gentianæ (E.)
 ————— Rhei (E. D.)
 ————— Tabaci (E.)
 ————— Veratri (L.)

In reviewing the entire series of preparations in New, and partially the British Pharmacopœia, we observe among them new, preparations. two new orders of compounds; if, indeed, both be not rather old forms revived. The one is a limited group of Suppositories, which held a place in some of our earlier pharmacopœias, and whose restoration now will present often desirable resources to the more ready access of the practitioner. The other is

a group of Succa, a form whose presence in our more ancient codices is attested by the once famous Five Juices. The Aceta, on the other hand, disappear as a class. The dilutions of the Hydrochloric, Nitric, and Sulphuric acids are now so proportioned as to be of nearly equal strengths, six drachms of each requiring for its saturation a hundred measures of the volumetric solution of soda. The name of Electuary disappears, and the group of confections has been properly reduced in number. The Cerates and Ointments, before needlessly and inconveniently separated, are now, we observe, mustered together under the latter title. The Plasters, lessened in number, seem, in many respects, advantageously modified in composition. From among the Decoctions and Infusions, it will be observed that those of the pale and red Barks have been deleted, and must therefore be now ordered by direct magistral prescription, if desired in preference to those of the yellow Bark. For the Extracts, the directions have been generally and materially altered, as the result evidently of much careful trial and consideration; and they have been apparently so improved as to secure a more uniformly efficient product than was attainable by most of the relinquished processes. The Liniments too, as a class, have undergone considerable changes, and are now of greater and more diversified energy. Of the former Liquors a part are dismissed; some of them, doubtless, because bearing, like other formulæ that have been abandoned, rather the character of an extemporaneous prescription than that of an officinal preparation. As a rule, a pharmacopœia manifestly ought not to include forms that can be dispensed on the instant; but rather the materials for such forms, themselves requiring more or less of previous elaboration.

A few exceptions to this rule, nevertheless, yet perhaps of a kind more apparent than real, are observable in the new pharmacopœia; where their presence may be appropriate, partly to serve some special convenience, and partly from respect to an established usage, on the one hand, or in order to attract towards a new familiarity, on the other. We may look, for example, upon the *Liquor Morphie hydrochloratis* as among those thus peculiarly justified; and it will be observed that, in conformity with the rule to which we have already alluded, instead of representing the former London strength of a grain to the drachm, it is now of half that strength only, or of the proportion formerly directed in the Edinburgh and Dublin pharmacopœias. Among the Pills, many will be inclined to regret the absence of the *Pilula Aloes et Ferri* of the late Edinburgh pharmacopœia, a formula justly commended by Dr Christison in his Dispensatory, and regarding which our own experience suggests no other pill-mass that is capable of being modified into more true and extensive usefulness. The *Colocynth* and *Hyoscyamus* pill, long widely used in Scotland, may be new to many elsewhere who will do well to make its acquaintance. The group of Spirits is largely reduced in number. With the Syrups, a new kind of care

has been taken to give the several both net and specific weights of the products, as important to show the proportion of sugar, in relation to their keeping qualities. The Syrupus Papaveris has been retained, though, it is probable, not without some hesitation, when we consider the uncertainty of its strength, and its frequent and dangerous adulterations, the notoriety of which brings scandal on the less respectable of our druggists. The Syrup of Senna, of the strength and mode of preparation directed, is a new, though, in our opinion, still an improvable form of this useful medicine.

Of the Tinctures we observe, that they are now directed to be prepared in uniform quantities of a pint, and by maceration and percolation wherever the material is adapted for that method. The Tincture of Aconite has been prudently reduced to about a third of the former strength of that of London, and to a fourth of that of Dublin in 1850. The Tincture of Belladonna is represented now with half of the former strength of the London pharmacopœia, and two-fifths of that of Dublin. The camphorated Tincture of Opium is of the strength of the former Edinburgh formula, or has a grain of opium in the half-ounce. The Tincture of Foxglove is of the former strength of that of Dublin; or is about an eighth stronger than it was previously in the other pharmacopœias, and is thus a noticeable, though not a very material exception to the rule, that where there is a selection from among the formulæ for any powerful drug, it shall be of the weaker rather than of the stronger. The Tincture of Ergot, formerly only in the Dublin pharmacopœia, is introduced with an increase of strength of one-fifth. Only one Tincture of Iodine is directed, the constitution of which approaches that of the former compound tincture of London and Dublin, but with a reduced proportion of Iodide of Potassium. As it is designed nearly exclusively for internal service, a Linimentum Iodi is provided for purposes of external application. The Tincture of Opium, from its use and importance, almost the typical tincture, is now of the proportions in the former Dublin pharmacopœia, or is nearly a tenth weaker than before in the London and Edinburgh pharmacopœias. Thus, instead of having 36 grains to the ounce, and $4\frac{1}{2}$ grains to the drachm, the respective quantities are now 32·8125 grains to the former, and 4·10156 grains to the latter, as expressible by the new weights; and the grain of opium, instead of being represented by a little more than 13 minims, requires $14\frac{1}{2}$ minims. But we must refer to the book itself for a closer survey of the changes which have been effected. It is impossible to direct attention here to the whole of even the more important alterations, and least of all to the multitude of the smaller, yet never utterly trivial, details. Enough has already been shown, or may be afterwards indicated, to prove that the work of amalgamation and reconstruction appears to have been, in every respect, thorough and conscientious. The results must be left to each class of readers to master, according to their own special wants, and in their own way.

With these necessarily imperfect explanations, we proceed to give a list of those formulæ and processes for preparations and compounds that either appear now as altogether novel in the British Pharmacopœia, or that have acquired its sanction, generally with more or less marked modifications, after having, in the proportion indicated by the initials appended, been included in some of the former pharmacopœias without having been common to all. In a few instances, an old title represents a virtually new preparation, and is entered as such:—

Acidum nitro-hydrochloricum dilutum (D.)	Extractum Krameriaë (E.)
Aqua Anethi (L. E.)	———— Lupuli (E.)
———— Carui (L. D.)	———— Nucis vomicaë (L. E.)
———— Fœniculi (E. D.)	———— Opii liquidum.
———— Laurocerasi (E. D.)	———— Pareiraë ———.
———— Sambuci (L. E.)	———— Quassiaë (E.)
Argenti oxidum (D.)	———— Stramonii (L. E.)
Beberiaë sulphas.	———— Taraxaci (L. E.)
Calcis carbonas præcipitata (D.)	Fel bovinum purificatum.
———— phosphas ——— (D.)	Ferri arsenias.
Cataplasma carbonis (L.)	Ferri et Ammoniaë citras (L. D.)
———— Conii (L.)	———— — Quinia ———.
———— Fermenti (L.)	———— peroxidum hydratum (E. D.)
———— Lini (L.)	———— phosphas.
———— Sinapis (L.)	———— sulphas granulata (D.)
———— Sodæ chloratæ (L.)	Ferrum redactum (D.)
Chloroformum (L. D.)	Infusum Chirataë (E. D.)
Collodium.	———— Cinchonæ flavæ (L. E.)
Confectio Scammonii (L. D.)	———— Cusso.
———— Sulphuris (D.)	———— Dulcamaraë.
———— Terebinthinæ (D.)	———— Ergotæ (D.)
Decoctum Cinchonæ flavæ (L. E.)	———— Krameriaë (L. D.)
———— Granati radici (L.)	———— Lupuli (L.)
———— Hordei (L. D.)	———— Maticæ (D.)
———— Pareiraë (L.)	———— Senegæ (E. D.)
———— Scoparii (D.)	———— Serpentariaë (L. E.)
———— Taraxaci (L. E.)	———— Uvæ Ursi.
Digitalinum.	———— Valerianaë (L. D.)
Emplastrum calefaciens (D.)	Jalapæ resina (E.)
———— Galbani (L.)	Linimentum Aconiti.
———— Picis (L. E.)	———— Belladonnaë.
Enema Aloes (L.)	———— Camphoræ compositum (L. D.)
———— Magnesiæ sulphatis (E. D.)	———— Cantharidis.
———— Opii (L. E.)	———— Chloroformi.
Extractum Aconiti (L. E.)	———— Crotonis.
———— Aloes Socotrinaë (L.)	———— Hydrargyri (L. D.)
———— Barbadosis (L.)	———— Iodi.
———— Anthemidis (E.)	———— Terebinthinæ aceticum.
———— Belæ liquidum.	Liquor Antimonii terchloridi (D.)
———— Calumbæ.	———— Atropiæ.
———— Cinchonæ flavæ liquidum.	———— Calcis chloratæ (L. D.)
———— Colchici (L.)	———— — saccharatus.
———— Ergotæ liquidum.	———— Ferri perchloridi.
———— Filicis ———	———— — pernitratæ (D.)
———— Hæmotoxyli (L. E.)	———— Hydrargyri nitratæ acidus (D.)
———— Jalapæ (L. E.)	

Liquor Potassæ permanganatis.
 ——— Sodæ chloratæ (L. D.)
 ——— Sodæ (L. D.)
 ——— arseniatis.
 ——— Strychniæ.
 Lithiæ citras.
 Mistura Ammoniaci (L. D.)
 ——— Creasoti (E.)
 ——— Ferri composita (D.)
 ——— Guaiaci (L. E.)
 ——— Scammonii (E.)
 Pilula Assafoetidæ composita (E. D.)
 ——— Cambogiæ (L. E.)
 ——— Colocynthis et Hyoseyami (E.)
 ——— Ferri carbonatis (E.)
 ——— Ferri iodidi.
 ——— Plumbi cum Opio (E.)
 Podophylli resina.
 Potassæ chloras (L. D.)
 ——— citras.
 ——— permanganas.
 Potassii bromidum.
 Pulvis Amygdalæ compositus.
 ——— Catechu ——— (D.)
 ——— Kino cum Opio (L.)
 ——— Rhei compositus (E. D.)
 ——— Tragacanthæ ——— (L. E.)
 Santoninum.
 Scammoniæ resina.
 Soda caustica.
 Sodæ arsenias.
 Spiritus Armoraciæ compositus (L.)
 ——— Cajuputi.
 ——— Chloroformi.
 ——— Juniperi.
 ——— Lavandulæ (E.)
 ——— Menthæ piperitæ (L. E.)
 ——— Myristicæ (L. E.)
 ——— Rosmarini (L. E.)
 Succus Conii.
 ——— Scoparii.
 ——— Taraxaci.
 Sulphur præcipitatum (L.)
 Suppositoria Acidi tannici.
 ——— Morphicæ.
 Syrupus Ferri phosphatis.
 ——— Floris Aurantii.
 ——— Hemidesmi (D.)
 ——— Mori (L.)
 ——— Papaveris (L. E.)
 ——— Rhæados (L. E.)
 ——— Rosæ Gallicæ (E. D.)
 ——— Scillæ (E. D.)
 ——— Sennæ (L. E.)
 Tinctura Aconiti (L. D.)
 ——— Aloes (L. E.)

Tinctura Arnicæ.
 ——— Belladonnæ (L. D.)
 ——— Benzoini composita (L. E.)
 ——— Bucco (E. D.)
 ——— Cannabis Indicæ (D.)
 ——— Castorei (L. E.)
 ——— Chiratæ (D.)
 ——— Cinnamomi (L. E.)
 ——— Cocci (D.)
 ——— Conii fructus.
 ——— Croci (E. D.)
 ——— Ergotæ (D.)
 ——— Guaiaci ammoniata (L. E.)
 ——— Kino (L. E.)
 ——— Krameriæ (D.)
 ——— Limonis (L. D.)
 ——— Lobeliæ Ætherea (L. E.)
 ——— Nucis vomicæ.
 ——— Quiniæ composita (L.)
 ——— Sabinæ.
 ——— Senegæ.
 ——— Serpentariæ (L. E.)
 ——— Stramonii (D.)
 ——— Valerianæ ammoniata (L. E.)
 Trochisci Acidi tannici.
 ——— Bismuthi.
 ——— Catechu.
 ——— Morphiæ (E.)
 ——— ——— et Ipecacuanhæ (E.)
 ——— Opii (E.)
 Unguentum Aconitiæ.
 ——— Atropiæ.
 ——— Belladonnæ (L.)
 ——— Calomelanos.
 ——— Cetacei (L. D.)
 ——— Cocculi (E.)
 ——— Elemi (L. D.)
 ——— Gallæ (D.)
 ——— ——— cum Opio (L. E.)
 ——— Hydrargyri ammoniati (L. E.)
 ——— Hydrargyri iodidi rubri (D.)
 ——— Plumbi subacetatis.
 ——— Potassii iodidi (L. D.)
 ——— Resinæ (E. D.)
 ——— Terebinthinæ.
 ——— Veratriæ.
 Veratria (L. E.)
 Vinum Aloes (L. E.)
 ——— Colchici (L. E.)
 ——— Ferri.
 Zinci acetas (D.)
 ——— carbonas (D.)
 ——— chloridum (L. D.)
 ——— valerianas (D.)

Appendix. In an appendix are included those adminicles which, having no direct agency in the treatment of disease, are yet required in the laboratory as subservient to the processes of pharmacy. These are grouped under separate heads, embracing the articles employed accessorially in the preparation of medicines, with those requisite for chemical analysis, and the various test solutions for qualitative and volumetric analysis. There is also a table of symbols and equivalent weights of the elementary bodies mentioned in the pharmacopœia, followed by another table showing a few of the relations of the weights and measures. A list of illustrated plates of reference, and an index, complete the volume.

We have now indicated, we trust, by the tenor of our remarks, not less our sense of the great national importance of the work before us, than our admiration of the manner in which, whether in plan or in detail, it has been carried to its completion. That the task should have been a labour of time was unavoidable, from its nature and from its circumstances. A process of amalgamation is in itself, and as a rule, one of peculiar difficulties; and these are not diminished where old and honoured predilections and habits are reciprocally to be treated unsparingly, which yet it would be impolitic to touch ungently. Neither could it be an easy, though, in a certain sense, it might be a less delicate task, to place the whole work on what ought to be admitted, by common consent, to be the just level of the science of the time; and to represent it there perspicuously and concisely, with that shrewd eclecticism which left out nothing essential and let in nothing superfluous. The distance at which the several deliberating bodies were placed from each other; the hundreds of meetings of the Committees, with the preparations that preceded, and the intercommunications of minutes and of explanatory discussions on all kinds of points, through correspondence, that followed each of them; the adjustment of characters and tests, and the trials of formulæ and processes, that involved much especial investigation and experiment in the intervals; the necessarily constantly recurring revisions and re-revisions of the work, whether in its parts or as a whole, requiring frequently remodelled and re-written drafts of the different sections; and the watching to observe that nothing had been misstated or omitted in reducing finally the fragmentary task-work to a unity, while conducting it through the press at the close—all caused and made up a doubtless slow and complex, yet indispensable succession of duty and labour.

In any after edition of the pharmacopœia, an immense proportion of this description of toil will be unneeded, and the task will be proportionally easy, and may be rendered even more than proportionally rapid. Besides it may henceforward be approached more gradually. The profession, on the other hand, will always look

jealously on any show of haste that may provoke suspicion of heedlessness and error, feeling it to be its better wisdom to tolerate rather procrastination than unripeness of judgment. And besides, much of what has apparently been delay in the issue of the pharmacopœia has, we are aware, not been due to the actual period required for its compilation by the Committee. The work, we learn from the preface, and might have gathered from other previously published notices, was, in so far as depended upon the Committee, all but ready for the press in the spring of last year; but the discovery that, without new legislative enactments, the Council could neither secure a copyright title, nor give due authority to the British Pharmacopœia, with subsequently the necessity of altering the pharmaceutical weights, postponed further proceedings for a year longer. Perhaps, on the whole, we ought even to express our satisfaction that a termination has been reached so soon, and may admit that a want of harmony, even though not of energy, of action on the part of the different local divisions of the Committee might have deferred it to a still later date. We have already seen that our predecessors generally, if we do not prefer to concede to them the merit of having been more circumspect, must be allowed to have been far more dilatory; and we believe that our contemporaries elsewhere must be judged somewhat similarly. Though only designed for a single nation, and with no nice duty of amalgamation incumbent on the framers, the recently issued Norwegian Pharmacopœia occupied for its completion fully double the time that has been consumed for ours; while the labours for a new edition of the Prussian Pharmacopœia, begun in 1857 under like facilities, and reported to be nearly perfected in 1861, were not completed till the close of the year succeeding. There are other countries, besides, in which a new codex has been long much required, and where it has been confidently promised, but is still waited for.

If we have thought it just, from the commencement of our remarks, to mix somewhat of the historical with the analytical in their tenour, and have made grateful reference to the now superseded labours of those with whom formerly lay the duty and privilege of constructing our national pharmacopœias, as well as offered to them our tribute for the manner in which they have honourably divested themselves of a charge which they had worthily fulfilled, it would be a default to permit the new labour to enter on its now undivided domain, without adding to an acknowledgment of its merits, a recognition of what we are entitled to term the wide prerogative of its destiny. That authority which is to be henceforward the supreme rule in selecting, preparing, and dispensing the appliances for the relief of suffering, throughout all parts of an empire whose extent has been imaged by the saying that the roll of its morning drum never ceases by sea and land as it follows the sun's course round the world, has a larger field and a more notable mission, with regard to any merely temporal duty, than can well be claimed

for whatsoever other emanation from the press. It is a work which must be promptly possessed by every practitioner, at home or abroad, whether in the private or public medical service of the country, as well as by every druggist; and its details, whether of themselves, or as modifying the old usages through change or innovation, must be noted, remembered, and followed by all in the hourly discharge of their duties.

There must unavoidably for a while, as all may conceive, and as we have already remarked, be some irksomeness in struggling first against the old prepossessions and habits, and in gaining next familiarity with the new forms and lessons; but this, each feels, will be cheerfully submitted to, in the consciousness that while much change was necessary, because amalgamation implied change, the boon to be ultimately conferred is one that will redound in every other and higher respect to the advantage of the community and to the honour of the profession. We repeat, then, for the British Pharmacopœia, on every main point of consideration, our hearty approval and welcome; at once for its own sake, and because we see in its inauguration an epoch that is to mark the advance from past encumbrances towards fresh capabilities in the resources of the art of healing among us.

Report of an Examination of certain European Institutions for the Insane. By Dr T. TILDEN BROWN, Physician of the Bloomingdale Asylum, New York. Utica, N. Y.: 1864.

THE Sheppard Asylum at Baltimore, in Maryland, is a rich institution for the insane, founded by the benevolence of one individual, and not yet completed, the trustees of which worthily employed part of their surplus funds to enable Dr Brown to make the inspection of which this report is the fruit. Dr Brown visited the Asylums of England, Scotland, Holland, Switzerland, and France. Though Dr Brown regards Great Britain as offering a much more profitable field for study in its institutions for the insane than any continental country, yet it was not till he visited Neufchatel that he found a close parallel to that asylum for the improvement of which his tour was projected. The "Prefargier Institution," at Neufchatel, afforded to our author an almost exact counterpart of the Sheppard Asylum in its origin and character. The following extract will give some idea of its general arrangements:—

"It is the creation of the benevolence and munificence of Mr Augustus de Menron, a native of Neufchatel, who, having acquired wealth as a South American merchant, returned to his country, and devoted the sum of six hundred thousand dollars to erect and endow an asylum for the care and treatment of one hundred curable patients. Mr de Menron gave his personal attention to the development of his humane design, and appears to have studied very thoroughly the whole subject of insanity in its relation to his purpose. The

building, which is the joint design of Messrs Fabret and Ferrus; two eminent Parisian alienists, and of M. Phillipon, an equally distinguished architect of France, is in the prevailing French form and style—a quadrangle intersected by corridors of communication. The arrangement of rooms is adapted to the accommodation of three classes of patients, all of whom are charged more or less for care and treatment, according to their means and the division they occupy. The first, or indigent class, are charged fifteen cents per day; the second, forty cents per day; and the third a higher rate, which is determined in each instance by a committee of the managers. None but natives or residents of the canton of Neuchâtel are admitted at the lowest rate. The building is divided symmetrically between the two sexes, and each department has five subdivisions for purposes of classification. Special attention has been given to avoid direct appearance of constraint, by omitting the usual guards from the windows of the majority of the apartments. The doors and windows of the first storey open upon airing courts, enclosed by sunken walls, which prevent elopement, while they permit views of the country, and thus no impediment to exit is necessary at the window. The dormitories of the second storey have no other guards than inside shutters, which are closed and locked at night. Patients are not allowed to remain in these rooms during the day. A few strong rooms for seclusion of violent patients are amply secure for their purpose. The building is warmed by a hot-water apparatus, the radiators being placed in the apartments, and its practical operation is said to be satisfactory. It was also claimed that an adequate ventilation was secured by means of the same apparatus; but such result could not be inferred from an inspection of the asylum during the summer. A picturesque and inviting form of water-cure found at Prefargier is the lake bath. A large wooden building, constructed on the margin of the lake, contains a spacious and safe swimming-bath, and other smaller baths. A portion of the building serves for laundry purposes. The swimming-bath is said to be much resorted to by the patients, and I could readily believe that they should prefer it to the six hours' soaking in a continuous warm bath, in covered bath-tubs, which four men were undergoing during my visit. This mode of treatment in mental affections is much in vogue in French asylums, but some superintendents expressed much distrust of its efficacy, and fears of its bad influence in prostrating the patient."

The following remarks direct attention to a circumstance of which we were not previously aware:—

"In their social character and usages, the people of Scotland are said to resemble Americans even more closely than do the English; and an American alienist, who has just passed through the comparatively quiet galleries of an English asylum, is at once reminded of his home experience by the more energetic manifestation of individual traits which prevails among the inmates of Scotch institutions."

As our method of dealing with the insane in Scotland has of late years met with severe reproofs, some of them not altogether undeserved, we are glad to be able to cite the authority of this American stranger in behalf of the general excellence, at the present moment, of our chief institutions for this unhappy class of patients:—

"As illustrating the success of this method of providing places of refuge for the victims of insanity [*the method adopted in Scotland as to public asylums*], I may say that the Gartnavel Asylum, near Glasgow, seemed to me the most complete and spacious, and its department for private patients the most liberal in its equipment, of any I saw in Great Britain. Built in the Tudor style of architecture, and of handsome greyish-coloured stone, this institution is palatial in its dimensions, and quite as impressive in its way as those noble relics of feudal times, Windsor or Warwick Castles. Should the two divisions for

private and pauper patients be hereafter united by an intermediate chapel, with lateral passages, as contemplated in the original design, it would have but few rivals; and its tasteful, amply furnished apartments for prosperous patients, and the generous allowance of space for the indigent class, with the prevailing attention to the personal comfort of all, would seem to render it the *ne plus ultra* of asylum excellence."

Our author proceeds to speak of the private asylums in Scotland, of which he says there are seventeen, containing in the aggregate about a thousand patients:—

"As with public institutions, so it also happened that the private establishment which impressed me more favourably than any other I saw in the kingdom, was a Scotch retreat for affluent patients. The establishment of Drs Smith and Lowe, near Edinburgh, comprises two buildings, Saughton Hall and the convalescent house of Balgreen. The former may have been, judging from its exterior, an ancient baronial residence, and though very picturesque, is not peculiarly convenient for its present uses. The latter had been recently erected by the proprietors, with special reference to the best accommodation of its occupants, and combined more perfectly the agreeable exterior of a modern villa and the internal arrangements of a well-devised asylum, than any building with which I am acquainted. The approach to the house revealed not the slightest intimation of its actual character, and the large plate-glass windows, screened from the sun by gay awnings, dispelled all suspicion of restraint. Yet these opened but a few inches at top and bottom, thus insuring the measure of protection deemed requisite in that division of the establishment. The richness of the furniture, and the profusion of articles of taste throughout the rooms, indicated a liberality on the part of Drs Smith and Lowe, which met a corresponding return from the wealthy invalids, who were naturally attracted hither by this deference to their accustomed requirements. Beautiful grounds surrounded both buildings, and in the midst of them stood a tastefully decorated music hall, containing a piano, harp, and organ, to entice the patients as by an impromptu occasion."

Dr Brown's Report on European Asylums extends to sixteen pages, and contains a great deal of very useful and interesting matter with respect to the arrangements adopted in the several asylums which fell under his observation, for the better treatment and improved comfort of the insane. This report is published in the October number for last year of the *American Journal of Insanity*.

Part Third.

PERISCOPE.

MIDWIFERY.

ON THE VOMITING OF PREGNANCY. BY PROFESSOR GUSTAV BRAUN, VIENNA.

DURING pregnancy various disorders connected with the stomach manifest themselves, which may affect either its sensations or its functions. The anomalies of sensation manifest themselves as mere repugnance to ordinary articles of food, especially of what was previously preferred, sometimes by longings after unsavoury or innutritious substances. These manifestations,

depending upon abnormal innervation of the vagus, are of no importance. It is different in regard to actual derangements of function, which show themselves in the form of loss of appetite, pressure in the gastric region, spasms of the œsophagus, retching and vomiting. Vomiting is sometimes one of the most obstinate and important manifestations of pregnancy, as it may impair the health of those suffering from it, or may cause an interruption to the course of the pregnancy.

The emesis consists sometimes in mere retching or in actual vomiting; and these manifestations may reach a high degree and recur frequently without causing any real mischief. We are often amazed to see women, who throughout the whole course of their pregnancy, every time they have eaten anything, are attacked sometimes earlier, sometimes later, with painful retching and vomiting, not only by day but by night, and yet not suffer much in their general health. In some cases the vomiting is preceded neither by pain nor feeling of pressure in the precordia; in others the uneasiness in the gastric region is permanent, the mouth becomes dry, the skin hot, the pulse frequent, and emaciation follows. Not unfrequently derangements of the cerebral functions show themselves, sometimes in the form of hallucinations, sometimes of violent headache, and occasionally a comatose condition supervenes, which is in the highest degree dangerous to life.

In the earliest period of pregnancy vomiting is pretty frequent, and some women suffer from it immediately after conception; whilst in many women no vomiting occurs during the whole course of pregnancy. If the vomiting sets in immediately after conception it may continue during the whole of pregnancy till delivery has actually taken place. Vomiting usually ceases on the expulsion of the child, and no longer annoys women who have been delivered. In some cases, though these are of rarer occurrence, the vomiting appears in the last three months of pregnancy, and may determine very unfortunate consequences. The vomiting which occurs during labour depends upon repletion of the stomach, a peculiar severity of the pains, and though the manifestations it occasions are painful, they are not dangerous.

Very different causes have been assigned for this vomiting, often obstinate and incapable of being arrested; thus Bretonneau ascribed it to a spasmodic rigidity of the womb which did not admit of the dilation necessitated by the increasing volume of the fetus; Negrier thought it was the result of an inflammatory irritation of the cervix sympathetically affecting the stomach. Kiwisch sought the cause of the vomiting in an unusual susceptibility of the nerves of the stomach, and considered that it was in close connexion with the chlorotic condition of the blood which is frequent in pregnant women. Frierichs directed attention to the coincidence of vomiting with albuminuria and uræmia. Clay has referred to an inflammatory condition of the cervix and os uteri as the cause of vomiting; while René Briau thinks it is due to retroversion of the uterus in the third month of pregnancy. Hohl succeeded in one case in discovering the cause of violent vomiting to be retroversion of the uterus at the fourth month of pregnancy.

The vomiting which appears late in pregnancy, especially during the ninth lunar month, is usually the result of the pressure which the uterus exerts on the liver or stomach, and it commonly disappears when the uterus sinks.

Virchow has directed attention to the circumstance that in pregnant women who endeavour to preserve a slender figure by the use of stays the portion of the liver lying below the line of application of the pressure is compressed between it and the ascending uterus, so that the gall-bladder may be compressed, and by the tension of the bile ducts an intense jaundice be produced.

The vomiting of pregnant women may be associated with or mistaken for the most various diseases of the chylopoietic viscera, as with acute or chronic gastric catarrh, with a perforating gastric ulcer, carcinoma of the stomach, or paratyphlitis.

Acute gastric catarrh is distinguished from the vomiting of pregnancy by its longer duration, and the disinclination for food; and chronic gastric catarrh is

distinguished by the character of the matter vomited, which mostly contains clots of blood. Perforating ulcer of the stomach is characterized by its almost invariably slow development, by the gastric pain and bloody vomiting. Cancer of the stomach can only be diagnosed with certainty when a hard swelling connected with the stomach can be clearly made out, and when it can be distinguished from swellings of neighbouring organs, accumulations of *fæces* in the transverse colon, tumours of the liver or of the omentum. The circumscribed, irregular, movable or immovable tumour which cancer gives rise to is almost without exception painful on pressure and even without it, and frequently there dart from it burning lancinating pains which extend to the back. The vomiting which occurs spontaneously or after meals consists at first of watery or slimy matters; later in the disease it resembles coffee grounds or chocolate, appearances which sufficiently distinguish it from the matters vomited by pregnant women. In perityphlitis there is a roundish, uniformly hard swelling, tender on pressure, which at first lies deep in the right iliac fossa; during inspiration and expiration the abdominal parietes move over it. If the cæcum is empty it is often necessary to press the abdominal wall deeply in, in order to recognise the swelling, and the percussion note is clear over it as the cæcum containing air lies in front of it. It is only in cases where the swelling reaches the anterior abdominal walls that a certain diagnosis is possible, and that this cause of obstinate vomiting can be recognised.

Difficult as it often is, in the case of those suffering from gastric symptoms, to determine whether these depend upon organic lesions, or are merely sympathetic phenomena, we are yet justified in ascribing them to the former, when they have existed for some time before the beginning of pregnancy; when the appearance of the tongue deviates considerably from its normal characters; when there is fixed pain, increased on pressure, in the precordia; when emaciation is progressive, or constant fever sets in. Even suppose we are so fortunate as to be able to make a certain diagnosis, little is often gained, as the treatment is only too often without result. Especially the sympathetic symptoms induced by pregnancy often present the most obstinate resistance and defy the resources of art. A cure not unfrequently takes place on the spontaneous occurrence of abortion; and cases have been published in which death of the fœtus without its simultaneous expulsion has been observed, and where symptoms which had previously resisted all treatment immediately disappeared. In some cases death has taken place in spite of the occurrence of abortion; Moreau has observed three cases with a fatal termination.

The treatment of the vomiting of pregnancy is not always crowned with satisfactory results, as indeed the long list of the most various remedies recommended sufficiently proves. The heightened sensitiveness of the stomach renders necessary easily digestible food, such as cold roast poultry, venison, and underdone beef. Good results are generally obtained from the use of seltzer and other aerated waters, and mild or even drastic purgatives; but the best effect is to be expected from bitter, tonic, antispasmodic remedies. Among these may be mentioned calamus, tincture of *ipeacuanha*, orange flower water, and *assafoetida*. Among drinks may be mentioned good old wines, champagne and coffee. Less favourable results are to be expected from opium, morphia, and castoreum. Hohl recommends, when the vomiting depends upon increased secretion of bile, and this is not occasioned by pressure on the liver, the use of bicarbonate of soda and tincture of *nux vomica*. Where there is inflammatory irritation of the cervix, Negrier thinks good is done by the application of leeches to the vaginal portion; and Bretonneau endeavoured to overcome spasmodic rigidity of the uterus by the application of belladonna ointment. Moriceau thought benefit was derived from the application of a large derivatory to the region of the stomach. Simpson speedily cured a severe case by inhalation of opium. Krause recommends that some lukewarm gruel or very weak green tea should be always kept in readiness, and that some cups of it should be taken quickly in order to provide material for the speedy evacuation of the stomach; he also found creosote combined with steel act very efficaciously.

Ferrand had a satisfactory result in a case of obstinate vomiting, where he employed moxas, and in another where he applied Vienna paste; in the second case, however, chloroform and iodine were also employed. In cases of the kind under consideration, Corvisart, Baudot, Gentles, and others recommend pepsine. They give ten grains of it once a-day, or a teaspoonful of the liquor pepticus thrice daily, immediately before meals. Hénôch recommends, when vomiting during pregnancy is very obstinate, the use of creosote. In three cases where other means had proved useless, he obtained a cure by means of it; in one case the vomiting ceased after the first dose, in another it was not checked for a month.

From the fear that from the continual vomiting a fatal result might occur, it has been proposed that abortion or premature labour should be artificially induced. Opinions are not unanimous as to the propriety of this proceeding. Cazeaux is opposed to it, because no special time can be fixed when the abortion should be brought about. Villeneuve is in favour of the induction of abortion when the life of the mother or child is seriously endangered. Busch considers abortion admissible in none but extreme cases. Hohl objects to the induction of abortion, because the most severe cases of vomiting very seldom end fatally. Churchill and Lee have by this means obtained very satisfactory results. C. Braun trusts to the expectant method, and recommends abortion only in cases where the life of the mother is seriously endangered.

In the few cases where vomiting depends upon retroversion of the pregnant uterus, it may, though having previously resisted all treatment, be speedily and permanently cured by replacing the womb in its normal position. This is proved by one of my cases, where obstinate vomiting accompanied antiflexion of the pregnant uterus. The observation is so much the more interesting, as no case similar to it has been published. The subject was a woman, twenty-two years of age, of healthy parents, who had menstruated for the first time in her sixteenth year, and in whom menstruation had always observed the normal type. In December 1862, menstruation ceased, and during this month the patient was in the enjoyment of perfect health. On the 1st of January 1863, vomiting occurred, which ceased on the following day, but returned a few days afterwards, until, finally, on the 13th of March, it was so violent that she was induced to apply for medical advice. On her admission the patient was found to be of the middle height, her osseous system was slender, and her muscular development proportional. The body was emaciated, the surface of a yellowish-white colour. The breasts, over which the skin was moderately stretched, were firm; the nipples irregular and surrounded by an olive-coloured areola. There were no head symptoms; the thorax was long, of moderate breadth, and well arched; inspiration and expiration were natural. The sounds on auscultation and percussion of the chest were normal; on palpation the lower part of the belly was found distended, and above the symphysis pubis an indeterminately limited tumour was recognised, which could not be closely examined in consequence of the tension of the abdominal walls, but over which percussion was dull. On vaginal examination the opening of the vagina was found moderately wide, the temperature of the canal was higher than natural, and the secretion from its mucous membrane increased. Through the anterior vaginal wall pressed a round firm tumour, which was movable with difficulty, and behind was continued in the vaginal portion, bent at an angle and directed towards the point of the coccyx. There was constipation, and the patient vomited ten or fifteen times daily, especially when fasting, a greenish mucus in no great quantity; there was no nausea, and the matter was discharged suddenly, as if by eructations. The pulse was normal; the patient only complained of occasional dizziness which lasted for one or two minutes, and which came on when she sat up in bed.

An absence of the other symptoms which accompany those diseases, of which vomiting is a symptom, such as acute or chronic gastric catarrh, perforating ulcer, carcinoma of the stomach, paratyphlitis, rendered the diagnosis easy, and the vomiting was accordingly referred to the flexed condition of the pregnant uterus.

Although it was probable, but not certain, that there was an absence of adhesions of the fundus to the posterior wall of the bladder, the prognosis was only doubtful, as when the uterus is replaced it too often again falls over; the prognosis regarding the cessation of the vomiting was dependent upon the greater or less facility of the reposition of the flexed uterus and its retention in its normal situation.

I therefore determined to endeavour to replace the flexed uterus. With this view the urinary bladder was emptied by means of an elastic catheter, and the rectum was cleared out, and as the patient's susceptibility was very inconsiderable, I decided to attempt the replacement of the organ without the help of chloroform. Two pillows were now introduced below the sacrum so as to elevate the pelvic region. The index and middle fingers of the left hand were introduced into the vagina, and pressure was made forwards and upwards. The fundus of the uterus immediately passed upwards, and could be clearly felt through the abdominal parietes. In order to prevent the uterus from falling backwards, the patient was directed to lie upon her face, a position which she kept pretty continuously for several days. The result was most satisfactory. The vomiting, which had occurred six times in the morning of the day when the replacement of the uterus was effected, at once ceased. The patient stated that she experienced instantaneous relief when the replacement of the uterus was effected, and under a nourishing diet she made a rapid and perfect recovery.—*Wochenblatt der Zeitschrift der k. k. Gesell. der Aerzte in Wien*, Nos. 47 and 48, 1863.

Part Fourth.

MEDICAL NEWS.

CONVERSAZIONE OF THE ROYAL COLLEGE OF SURGEONS.

On Friday the 22d of January, a *Conversazione* of the Royal College of Surgeons was held in their Hall, Nicolson Street, when Dr Gairdner delivered an address on "The Early History of the Medical Profession in Edinburgh," which will be found at page 681 of the present number of the Journal. On the motion of Lord Deas, seconded by the Rev. Sir Henry Moncreiff, a cordial vote of thanks was accorded to Dr Gairdner for his interesting address.

REPORT OF THE TRIAL OF JOHN BELSHAW FOR MURDER, WITH REMARKS.

By HUGH COWAN, Esq., Advocate.

THE following case, tried at Glasgow Circuit, on Tuesday 22d December 1863, presents some points of medico-legal interest. But little light was thrown upon it by the general evidence in the case. The case, therefore, turned entirely on the medical evidence, and it appears to me that there can be little difference of opinion as to the result arrived at. The only suspicious medical fact in the case was the effusion of blood about the neck, which was clearly the result of some external violence. A consideration of probabilities will, I think, lead us to infer that if the violence which produced that effusion of blood was connected with the death of the deceased, the application of something external to that part of the neck must have been so long continued

that it would have left a mark or marks ; and there were no marks of fingers or of anything else on the neck which could account for the effusion. The question then arises, how could it otherwise have been produced ? A natural answer suggests itself from the facts of the case. The woman, being drunk, had a fall, and if any hard substance happened to be in the way she would not try to avoid it, but in falling might have struck that part of the neck as readily as any other, and so have caused the effusion, which, on this supposition, would have no connexion with her death. Looking, then, a little further into the report of the post-mortem examination for the cause of death, the first inquiry is, whether the cause of death—asphyxia—suggested by the Crown is borne out by that report. And it will be observed that the state of the heart, quite empty, is not that which usually occurs in cases of strangulation. There is usually a difference between the right and the left ventricles of the heart, the right being distended with blood, and the left being empty ; and though it is true that this is not invariably the case, yet the absence of this distention of the right ventricle of the heart is so unusual an occurrence, that a report which details this as one of the post-mortem appearances cannot well be said to support the conclusion of death from asphyxia. The utmost value which can be given to it is, that it is not inconsistent with death from asphyxia ; and if the general evidence of the case strongly pointed to strangulation as the actual means of death, the empty state of the heart could not be founded on as overruling that. Where, however, the general evidence is weak and inconclusive, the empty state of the heart being a circumstance so unusual in a case of strangulation, it appears to me dangerous to found upon it a conclusion of death from asphyxia. On a further examination of the post-mortem report, it appears that the membranes and substance of the brain were much congested. This circumstance, together with the state of the heart, leads me to agree with the medical witnesses examined for the defence, that death resulted from apoplexy. In the circumstances of this case it was a natural result of the woman's being excited with drink and quarrelling, possibly increased, too, by the agitation of the fall ; so that on the whole the result arrived at by the jury may be regarded as a right result.

The prisoner, John Belshaw, was placed at the bar, charged with the crime of murder, in so far as on 24th or 25th October last, in the house situated in Old Dalmarnock Road, Glasgow, occupied by him, he did wickedly and feloniously attack and assault the now deceased Elizabeth Kirkland or Sim, then residing with him, and did with his fists strike her several, or one or more, severe blows on or about the head and face and other parts of her person, and did with his hands, or in some other way to the prosecutor unknown, violently grasp or compress her neck or throat, and did thereby, or in some other manner to the prosecutor unknown, strangle or suffocate the said Elizabeth Kirkland or Sim, in consequence whereof she immediately, or soon thereafter, died, and was thus murdered by him, the said John Belshaw.

The prisoner pleaded not guilty, and was defended by Donald Crawford and Charles Stewart, Esqs., advocates ; for the Crown, James Crichton, Esq., A.-D.

The general evidence of the case may be very shortly given. It showed that both the pannel and deceased were given to drinking ; that the deceased had been drinking on the Saturday afternoon, and was the worse of it ; that they did not get on well together, and in particular, he having previously used threatening language to her, they were heard quarrelling after they were left in

their own house alone that night; that about twelve o'clock deceased was heard greeting, but the sound of a fall was heard before that; that about four in the morning the brother of deceased came to his sister's house, and sat for a short time with the prisoner, who said he thought there was something wrong with deceased; that he then looked at her lying on the bed, putting his hand to her mouth, found she was breathing, and thought she was just in a drunken stupor; that on Sunday morning, about nine o'clock, prisoner came to the neighbours, and with evident concern told them that the deceased was dead. The following medical evidence was led in the case:—

William Young, surgeon.—I went to the pannel's house on Sunday 25th October last between 5 and 6 o'clock. I made a cursory examination of the body of the deceased, and made a short report. There was blood amongst the hair, which I supposed had issued from the nose and mouth.

Dr G. H. B. Macleod, physician and surgeon.—I examined the body of deceased and made a report. It is as follows:—

Glasgow, October 26, 1863.

In accordance with the warrant of A. Erskine Murray, Esq., sheriff-substitute of Lanarkshire, the undersigned this day, at No. 52 Old Dalmarnock Road, made an inspection of the body of Elizabeth Kirkland or Belshaw, a woman aged apparently about 30, and whose body was identified by Jane Longmuir or Irvine, and Ellen Coyle or M'Call, both neighbours of the deceased.

The body was that of a female of ordinary stature and development. It lay fully clothed on its right side in bed. The rigidity of death had left the left leg, and also partially the left arm, but it was marked in both right extremities. The hands were clenched, and the thumbs turned into the palms. The forearms were bent and raised in front of the body. There was no wound or injury observed on any part of the surface. Decomposition was faintly apparent in the loins and abdominal walls.

The face and lips were swollen and intensely livid. The neck was dark-coloured, and its veins, as well as those of the scalp, were full of blood. The tongue was swelled, and protruded between the teeth. The gums were livid, the pupils slightly dilated, and the eyeballs bloodshot. Bloody fluid escaped from the mouth and nose, and fæces from the anus.

On cutting into the tissues in front of the neck, blood was found effused in front of the windpipe, from below the chin downwards to a distance of about two inches, and laterally as far as the sides of the windpipe. The living membrane of the windpipe was congested, and bloody mucus was found in the air passages. There was no foreign body in the throat.

Both lungs were intensely congested throughout. The left lung presented traces of old disease. The heart was healthy; it was contracted and empty.

The viscera of the abdomen were all free of disease, except the left ovary, on which a simple cyst, about the size of the fist, had become developed. There was a faint alcoholic smell noticed on opening the stomach. This organ contained a little half-digested food, and was healthy. The bladder was half full of urine.

The vessels of the scalp were surcharged with blood. The skull and brain were free from injury, but both the membranes and substance of the brain were very much congested.

The reporters are of opinion, from the appearances above detailed, that the woman Elizabeth Kirkland or Belshaw died by asphyxia, and that that condition had apparently been produced by compression applied to the windpipe.

This is the truth, on soul and conscience.

(Signed) GEO. H. B. MACLEOD, M.D., F.R.C.S.,
Examiner in Criminal Cases for the Lower Ward of Lanarkshire.
JAS. STEWART, M.D. and F.P.S.

That is a true report. The appearances cannot be accounted for in any

other way than by external violence. I do not think the deceased could have inflicted the injuries herself. I discovered no marks of external violence. I looked for such. There might have been external violence without leaving any mark. A blow with the hand would have caused effusion of blood in front of the throat. The effusion of blood could not have been caused by deceased turning over in bed on her mouth and face, although she was drunk, without a blow or injury. The effusion in the throat could not have been caused by apoplexy or heart disease. *Cross-examined by Mr Crawford.*—The conclusion I came to as to the cause of death was arrived at solely from the appearance of the body at the time of the post-mortem examination. A fall upon a chair might have caused the effusion only. Nearly all the appearances presented by the body indicated that she had died from asphyxia. Taken separately, some of these appearances may occur naturally. There were some appearances on the body which I cannot explain on the supposition that the woman died from congestive apoplexy, caused by excessive drinking. Congestive apoplexy and asphyxia may occur together. Supposing the deceased to be suffering from excess of drink, and that in this state she was lying on her face, might all the appearances you saw be sufficiently accounted for with the exception of the ecchymosis on the trachea? If the woman was comatose from drink and laid on her face, so that she could not breathe, of course. I have known cases of persons suffering from excess of drinking dying from asphyxia, but it was always from the patient drawing back into the trachea vomited matters. *To the Court.*—Supposing the patient were in a partly comatose state, a slighter pressure would cause strangulation than if she had been sober. Is it a fair inference from that, that if there was a struggle between two persons, the one grasping the throat of the other, and the other being in a comatose state, death might occur unexpectedly? More easily. And therefore unexpectedly to the person grasping the throat? Yes.

James Stewart, physician and surgeon in Glasgow.—I made a medical report in this case along with Dr Macleod. That is the report. It is a true one. *Cross-examined by Mr Stewart.*—In this case there were no outward marks of throttling. A person may be effectually throttled without any fracture of the windpipe. The presence of the ecchymosed spot made me come to the conclusion that asphyxia had probably been caused by compression of the windpipe. Supposing this ecchymosed spot on the throat of the deceased to be accounted for by some accident that occurred to her the previous night, are the other appearances consistent with the supposition that she died from natural causes? It is quite possible she might.

For the defence there were examined,

James Gray, physician and surgeon.—I have practised my profession for eighteen years. I have an extensive practice in Glasgow. I was for four years demonstrator in the School of Anatomy in Edinburgh. I have read the medical report in this case. Putting the ecchymosis in front of the throat out of the question, all the other appearances could have been caused by death from excessive drinking. I have no doubt of that. There are appearances which I would have expected to see mentioned if the death was caused by strangulation, and which are not mentioned in the report. These are, externally, the mark of a thumb on one side and of one or more fingers on the opposite side of the throat, as also external scratches. Internally, a vermilion redness on the trachea, and on the pulmonary pleura small red ecchymotic spots; the right side of the heart congested with blood; the external surface of the intestines red, and the kidneys much congested. The ecchymosis in this case must have been the result of great violence, such as might have been produced by a fall on any hard substance. The pressure of a man's hand applied to the throat might be of sufficient violence to produce it. Supposing the mark to have been produced by a man's hand, it is possible the ecchymosis might have been produced, and yet that there should be no external mark. If the mark was produced by pressure by a man's hand, it is probable that if there was ecchymosis in front there would also have been ecchymosis on the

sides. The marks are generally plainer on the sides than in front. When death is produced by excessive drinking, there is often a convulsive fit at the end. *Cross-examined by the Advocate-depute.*—While the hand was applied to the throat, if a cloth was interposed, I would not have expected scratches on the throat; but I should still have expected the marks of the fingers. The red spots I have referred to invariably occur in cases of strangulation, but not in cases of suffocation. The congestion of the right side of the heart is general, but not universal, in cases of strangulation.

Thomas Johnston.—I am a licentiate of the Royal College of Surgeons of Edinburgh, and have long practised as a surgeon in Glasgow. I have seen the medical report in this case. All the circumstances stated in the report, with the exception of the ecchymosis in the trachea, are consistent with death from natural causes. Taking the facts as they are stated in the report, I think it very likely that this was a case of death from apoplexy, probably combined with epilepsy, diseases which are frequently found combined in cases of drunkenness. There are some appearances which I would expect to find in a case of throttling that are not present in this case. The empty right ventricle of the heart is a most unusual appearance. I would have expected the bowels to have been of a purple tinge, showing congestion of blood; and, above all, I would have expected the kidneys to have been largely congested with blood. The presence of bloody mucus in the air passages, which is described in the report, is, generally speaking, characteristic of epilepsy. I certainly do not consider that the appearances detailed in the report warrant the conclusion of strangulation. *Cross-examined by the Advocate-depute.*—The bloody mucus in the trachea is consistent with strangulation. *To the Court.*—I don't think that the appearances stated in the report warrant the conclusion of death from suffocation.

Edward William Pritchard.—I am a surgeon in Glasgow, and have read the medical report in this case. I do not concur in the conclusion arrived at that death was caused by suffocation produced by compression of the windpipe. I do not think there are any appearances mentioned in the report which are inconsistent with the supposition that death resulted from natural causes. If death had been caused by strangulation, I would have expected the right ventricle of the heart to have contained blood. I would have expected that in suffocation also. I never knew an instance in my own experience where that appearance was not observed. I think death might have been caused in this case by epilepsy or apoplexy, resulting from excessive drinking. The ecchymosis on the trachea is not such as I would have expected in a case of violent throttling. I would have expected to see the imprint of the fingers on the throat. The interposition of a cloth would not account for the absence of the imprint. A fall on a hard substance would satisfactorily account for the ecchymosis.

The Advocate-depute for the Crown, and Mr Crawford on behalf of the prisoner, having addressed the jury, Lord Deas summed up the evidence, and the jury, by a majority, returned a verdict of Not Proven.

OBITUARY.

DEATH OF DR NEWBIGGING.

On the 10th of January 1864, the profession and the public of Edinburgh were startled by the sudden and unexpected intelligence of the death of one of its most esteemed medical practitioners, Dr Patrick S. K. Newbigging. Till within three days of his death he had been seen driving about, actively engaged in visiting his numerous patients, and to all outward appearance cheerful, as was his wont, if not vigorous. Yet all this time, and for years before, he was labouring under symptoms of a deadly disease, viz.,—valvular disease of the heart and aneurism of the aorta,—unsuspected by any but a very

few intimate friends. The severe frost of the beginning of the year had told upon his enfeebled frame. He contracted a cold, which at first seemed mild; but febrile and bronchitic symptoms speedily developed themselves, followed by distressing asthmatic paroxysms, under which he succumbed, somewhat suddenly, on the morning of Sunday the 10th January. That for more than two years, notwithstanding the existence of such serious disease, Dr Newbigging should have been able not only to encounter the toils and emergencies of a large general practice, but, in addition, to execute most ably and conscientiously the arduous duties of President of the Royal College of Surgeons, to which office he was elected in October 1861, and which he only ceased to hold in October 1863; that he was able also during the same period to take an active and most useful part in the management of the Royal Infirmary, and that during half of that time he was able to serve with great acceptance the office of President of the Scottish Society of Arts, is most remarkable, and testifies a degree of courage, endurance, and love of useful and honourable occupation which are rarely met with. Nor are our astonishment and admiration lessened, when we recollect that these public duties which graced the last years of his life were in a great degree new to one whose previous career, however useful and active in his capacity of a practitioner, had been, as regards public affairs, singularly quiet and unobtrusive. That for long before his death he suffered frequently from breathlessness and exhaustion on exertion, and especially on ascending any rising ground, was known to one of his oldest and most attached friends, the writer of this very imperfect tributary notice; but he himself was very jealous of its being known, and so well did he conceal it that hardly any one, even those with whom he was constantly being brought in contact, had the least suspicion that, whilst he seemed ever cheerful and active, there lurked within his breast a fatal disease, which was steadily but surely increasing day by day, sapping his constitution, and ready at any moment to destroy him. Whether he himself was exactly aware of the extent of the disease we know not, probably not; but he was quite aware of its nature, and what such knowledge must have been to a medical man, a medical man only can appreciate. We have reason to believe that he knew enough to make him, to use the apostolic expression,—“consider;” and that for many months he was keeping calmly and resignedly before him the probability of his being obliged to abandon the practice of his profession, which he loved so much. Those who knew him most intimately could perceive steadily, almost imperceptibly, stealing over him a softening influence, and an occasional solemnity of expression, which betokened Christian preparation for the life beyond the present.

Dr Newbigging was born at Edinburgh on the 2d November 1813, so that at the time of his death he had little more than passed his fiftieth birthday. His father was the late esteemed Sir William Newbigging, who for many years practised medicine in Edinburgh with great success. Dr Newbigging was the youngest of five sons. Three of his brothers studied medicine, but all of these, as well as his other brother, who was a Writer to the Signet, died at comparatively early ages. Dr Newbigging's medical studies were carried on chiefly in Edinburgh, where he graduated in 1834. The same year he became a Fellow of the Royal College of Surgeons of Edinburgh. During his undergraduate career he was elected one of the presidents of the Royal Medical Society, an honour which is looked upon as the “blue ribbon” of medical studentship in Edinburgh, and has been the harbinger of success in life to the great majority of those who have held it. Dr Newbigging, before settling down in practice, spent some time abroad, availing himself diligently of the opportunities thus afforded him of adding to his professional knowledge in the best foreign schools of medicine. On his return home he was elected, and acted for some years, as one of the medical officers of the New Town Dispensary, an excellent field for gaining experience. In conjunction with his father, he enjoyed a large private practice,—his practice, as had been that of his father, was that of a general practitioner who declined obstetric practice. At that period the most distinguished of the general medical practitioners of

Edinburgh followed the same course, obstetric practice being left for the most part in the hands of professed accoucheurs. There are but few of that class now remaining, the majority of the general practitioners of the present day having deemed it necessary to betake themselves to the obstetric along with the other branches of practice. It may be doubted whether, in a large city like Edinburgh, where it is practicable, the old system had not many advantages which are lost under the present promiscuous system. Dr Newbigging, during his Continental tour, had had his attention particularly directed to the subject of auscultation, and in 1842 he found time to publish a translation of MM. Barth and Roger's practical treatise on that subject, illustrating the translation with some useful practical notes. After his father's death, Dr Newbigging succeeded in retaining the great bulk of his large practice, which he steadily retained to the end of his life. He received from time to time various professional appointments, amongst others the surgeoncy of John Watson's Institution and of Cauvin's Hospital, also the situation of medical referee to the Life Association Insurance Company of Scotland. He was one of the original physicians to the Sick Children's Hospital, in the foundation and progress of which he took a deep interest. He acted also for many years as one of the examiners of the Royal College of Surgeons. It is quite evident from what has been stated, that Dr Newbigging must have been a busy man; but such was his enthusiasm for his profession, and so singularly methodical were his habits, that all the duties which he undertook, numerous as they were, were faithfully and efficiently performed. Dr Newbigging was always a cautious, but a sound, judicious, and painstaking practitioner. Experience had taught him the importance, in the treatment of disease, of attending to the minutiae of practice, as well as to its salient points, and the result was that he was very successful in winning the confidence of his patients. But his success in practice was also aided by his courteous, mild, cheerful, and gentlemanly demeanour, and by the kindness and amiability of his disposition. His patients loved him. He was their friend as well as their physician. The extent of their affection for him has been signally marked by the poignancy of the grief which his unexpected decease has occasioned. In fine, of Dr Newbigging we may truly say, that he was a good specimen of a good class of medical practitioners, some of whom have been practising in Edinburgh for generations; and that being such, we have cause deeply to lament his premature withdrawal from amongst us.

DEATH OF DR JOHN BROWN, H.M.I.M.S.

WE feel it due to the memory of Dr Brown, from his high professional attainments, estimable private character, and short eventful career, to give something more than the simple notice of his death which appeared in the newspapers a few days ago. He was born in Edinburgh on 29th July 1829, and received his medical education in the Royal Infirmary there. He was a most diligent and successful student, having distinguished himself at Professor Simpson's class of Midwifery, gaining, after much competition, one of his prizes. He obtained his diploma as a licentiate of the Royal College of Surgeons, Edinburgh, in November 1852, and shortly thereafter was appointed house-surgeon to the Leith Hospital, which office he held for two years, from April 1853 to March 1855, and the duties of which he discharged most efficiently. Indeed, so highly were his services appreciated by those in the direction of the Hospital, that, on his leaving it, he was entertained by them to a public dinner, and presented with a handsome case of surgical instruments. During this period, he wrote a paper on the Epidemic Measles of 1854 in Leith, which appeared in the *Monthly Journal of Medicine* for April of the following year, and which displayed an intimate knowledge of his subject, and keen observation. During his connexion with the Hospital, he was also a member of the Hunterian Medical Society, on whose roll appear the names of many of the most eminent medical men, and was its president in 1855. This year, the

East India Company threw open their appointments to public competition, and Dr Brown, availing himself of this new regulation, proceeded to London, and passed a very satisfactory examination, standing high on the list. Shortly after his arrival in India, he was appointed resident surgeon at Nepaul,—an office which he held for fifteen months; and, during his residence there, cholera broke out with great virulence, and created frightful ravages among the population. He had thus the most ample opportunities of observing the character of this dreadful scourge, and gave the results of his observation and experience in an able paper, for which he received the thanks of the Indian Government. Shortly after leaving Nepaul, the Indian Mutiny broke out, and he was then ordered to Dinapore by the Government, to take medical charge of the Ferozepore Sikhs, then under the command of Colonel Brasyer, who was afterwards created K.C.B. for his distinguished services during the Mutiny. He proceeded to Allahabad to take charge of his regiment, and then marched from thence with General Neil to Ferozepore, at which place the rebels were attacked and defeated. After this they were joined by Havelock, under whom he saw numerous engagements, and in all of which he rendered valuable services; and was with him shut up in Lucknow during its memorable siege, and was afterwards at the taking of it by Lord Clyde. After passing through this eventful period of his life, and suffering many privations, which must have seriously impaired his constitution, and tended to shorten his days, he was allowed, in 1859, to return home to Edinburgh to recruit his health. Although prostrated by the fearful ordeal through which he had passed, his love of work continued undiminished; and, instead of occupying his short time at home in seeking that repose which was so necessary to the restoration of his health, and to which he was so well entitled, he ardently renewed his medical studies with a view to graduating in Medicine; and not only passed the required examination, but received the gold medal for his thesis at the graduation. This thesis, which, to use his own words in its opening sentence, “describes the most important features in the surgical cases which came under my notice during the late memorable Indian campaign,” was published in this Journal in September and October 1860.

He returned to India in the spring of 1860, with his health greatly improved, and, after a short residence at Segowlie, he was appointed first assistant-surgeon in the General Hospital at Calcutta, which office he filled most creditably up to the date of his death, which occurred suddenly on the 13th of November 1863, at the early age of thirty-four. He was buried on the same day with military honours, and his death cast a deep gloom over the many to whom his great worth was known.

CORRESPONDENCE.

NOTE BY DR GAIRDNER ON THE PREVALENCE OF URINARY CALCULI.

(To the Editor of the Edinburgh Medical Journal.)

SIR,—In the course of my recent investigations into the history of the medical profession, I stumbled on a fact which possesses a certain amount of scientific interest, but which, not being connected with Edinburgh, could not well find a place in my address at the Surgeons' Hall. It is that there flourished at Dundee, more than two centuries ago, a lithotomist of celebrity and of large experience, by name Andrew Archbald. All I know of him is through the medium of a tombstone panegyric, from which, of course, some deduction must be made, and for which I refer your readers to a collection of epitaphs published at Glasgow in 1834, p. 85. From this, it appears that he died at Dundee in 1662, at the age of sixty-seven; that he performed many successful operations for the stone, and was most benevolent in giving his professional services gratuitously to those who could not afford to requite him.

After all abatements, this epitaph must, I think, be held to establish that the town which, in the present century, presented to Crichton those large

opportunities which gave him a wide-spread reputation as a lithotomist, was possessed of the same painful distinction in the seventeenth century. The absence of calculus from the Royal Navy was long ago pointed out by Mr Copland Hutchison,¹ who estimated its proportion to other diseases in that service to be as 1 to 10,750, this ratio being taken from the returns of the Commissioners for conducting the sick and wounded department of the Navy for the sixteen years ending with December 1815, and excluding gunshot wounds and accidents. He further stated that there were only eight cases in the whole Royal Navy in these sixteen years, the average number of men being 162,000.

These things, together with the great prevalence of calculus in India, in Norfolk, and in Aberdeen, with its comparative absence from the Lothians, and from many other counties of Scotland, and, it may be, of England also, present an excellent subject of inquiry by means of our modern statistics. It has been believed to have been more prevalent among clergymen, and others leading a literary life, than among the sons of toil; and I think it was alleged by Dr Marcet (or Dr Prout, I forget which), that its prevalence in Norfolk was owing to the diet of the inhabitants, and more especially to certain hard-boiled dumplings of which they were fond. On the other hand, its prevalence among the rice-eating population of India would seem to contradict this hypothesis, or at least to suggest inquiries as to the relative chemical constituents of the calculi of India and of England.

Without prolonging these desultory remarks, I offer you this memorandum, as affording some matter which may prove suggestive to those whose leisure, and whose geographical position, present them with opportunities of inquiring further, and possibly of conferring a great benefit on humanity, by teaching us how to avoid the causes of so formidable a malady.

JOHN GAIRDNER.

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¹ Medico-Chirurgical Transactions of London, vol. ix.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Tracheotomy in Diphtheritic Croup.* By JAMES SPENCE, Esq., F.R.C.S., Surgeon and Lecturer on Clinical Surgery in the Royal Infirmary, Lecturer on Surgery, Surgeons' Hall, Edinburgh, etc., etc.

(Read before the Medico-Chirurgical Society of Edinburgh, February 3, 1864.)

IN 1858, and again in 1860, I brought under the notice of this Society the results of some cases of croup in which I had performed tracheotomy, to show the amount of success which had attended the operation in otherwise desperate circumstances. When I read my paper in 1860, I had performed the operation thirteen times in cases of croup in the most extreme suffocative state, and with the result of six cases recovering. I then stated, that though this amount of success was most encouraging, we could scarcely expect such an average to continue when the operations became more numerous. Since then I have had greater experience of the operation in this class of cases, having now operated fifty-four times in cases of croup and diphtheritic croup in children, with the result of nineteen recoveries; rather more than one recovery in every three cases. Whilst I take this opportunity to state my present general average success, it is chiefly to the diphtheritic cases that I wish now to direct attention; for, in regard to ordinary croup cases, I have little or nothing to add to what I have already said in my former papers, except that further experience has confirmed my views as to the propriety of the operation in that disease.

Though experience had shown such an amount of success in ordinary croup as to warrant the operation, it did not follow that in affections of the air-passages in diphtheria it would be equally warrantable. *A priori* reasoning, indeed, would almost lead to the conclusion that it is scarcely warrantable at all. All the circumstances seem unfavourable; not only have we an equal or even greater tendency of the diphtheritic exudation to spread downwards, than we have in the case of the false membrane in croup, but the disease may even affect the wound caused by the operation; moreover, it is a blood-disease of a very subtle nature, and of a most debilitating character, affecting the nervous system peculiarly, and destroying its victims by

exhaustion, even when there is no laryngeal or tracheal obstruction. Yet, so far as my own experience goes, the actual results of tracheotomy in diphtheritic croup show such an amount of success as in the otherwise desperate state of the patient fully warrants its performance. Medical friends have said to me—"I suppose you don't operate in diphtheria?" or, "Do any of your cases of diphtheria ever recover after tracheotomy?" It is for the purpose of answering such questions, and giving publicity to the actual results, in contrast to preconceived views, that I bring before you this short notice of the results of the cases in which I have operated; and of examining into the mode of death after the operation, and some of the complications in which the disease differs from croup.

First, then, as to the actual results: the number of cases of true diphtheritic croup in which I have performed tracheotomy is eighteen, and of these seven have recovered. In no case have I ever performed it except as a last resort, and I cannot recollect any case in which it did not afford temporary relief to the little sufferer. But whilst I make this statement as my present actual experience, I would guard you, as I did in reference to croup, against supposing that I consider the same favourable average will continue as the number of operations for diphtheritic croup increases; on the contrary, I have a much less favourable opinion of the probable results than in the ordinary croupous affections of children. I believe that the success will depend in a great measure on the constitutional condition, and the intensity of the diphtheritic poison, rather than on the laryngeal affection which necessitates the operation; and hence that surgeons will often meet with long successions of fatal cases, very trying and apt to make them abandon the operation; but, looking at the success which I have met with, I now feel bound to urge them to give the patient the chance of life afforded by the operation, even in the face of a long run of unsuccessful cases.

Having thus stated generally the results, I would now advert briefly to some points in the cases operated on; the general character of the successful cases; the general character, complications, and different immediate causes of death, in the fatal cases; and, lastly, the complications observed, which may have a bearing on our decision as to the propriety of operating.

The number of cases, as I have already said, is eighteen, and of these seven have proved successful. Regarding these successful cases, one was a boy about five years of age, in whom, after some symptoms not unlike those of occult scarlatina, croupous affection set in, gradually becoming worse, and in the course of about thirty hours giving rise to so much asphyxia as to necessitate operation. Another younger child in the same family had died of a sudden croupous and febrile attack a day or two before. In this case, though the immediate relief was great, the recovery was slow; the tube could not be permanently removed till the eighth day, and a small blistered surface near the wound assumed a grey phagedenic

appearance, and proved very troublesome; ultimately, however, the boy recovered perfectly.

Of two cases, patients of Dr Bryce of Dalkeith, which were both successful, one, three years old, had been under treatment for diphtheria for about a week, when the laryngeal symptoms appeared and progressed rapidly. I operated on this child at its own home at Dalkeith, and without much prospect of success, owing to its previous debility, etc.: but it recovered, though it was nearly three weeks before Dr Bryce could permanently remove the tube without suffocative symptoms recurring. During convalescence paralysis set in; but change to another part of the country improved the child's health, and the paralysis and debility gradually disappeared. The other case, from the same neighbourhood, was sent into hospital by Dr Bryce, to be under my care: it was at once relieved by the operation, and went on favourably; but in it also a very long period elapsed before I could remove the tube permanently. In another case, a patient of Dr Paterson of Leith, a little girl, *æt.* five years, had been suffering from ordinary sore throat and small ulcerations on the tonsils, when, suddenly, symptoms like those of *œdema glottidis* supervened, for which I operated. On the day after the operation the white leathery diphtheritic exudation appeared on the tonsils, and gradually spread: she recovered perfectly; but several, or I believe all the other, children of the family were attacked by diphtheria. George Carrol, *æt.* 3, operated on by me in the Infirmary, was sent in by Dr Bruce. The croupous symptoms had appeared early, and gone on rapidly, so that suffocation was threatened when I operated. In this case the diphtheritic exudation covered the tonsils, uvula, and palate; but he recovered uninterruptedly and without any complication worth notice. In the case of a fine boy, Alex. Ferguson, who was sent to my care by Dr Wilson of Stockbridge,—he had just come from Wales with his mother to visit their relatives in Scotland, when he was suddenly attacked with diphtheria,—the laryngeal symptoms were most urgent when I operated, and he had a convulsion, with strabismus, after the operation; but he gradually rallied and made a good recovery. But in this, as in several other cases, nearly a fortnight elapsed before the tube could be removed without dyspnoea returning. In the case of a boy about five years old, residing at London Row, North Leith, a patient of Dr Williamson, I learned that the family had just returned from near Newport in Fife, where diphtheria had been prevalent, and that whilst there he had had a threatening of croup which passed off, though leaving him weak and feverish. A day or two after coming home diphtheria showed itself, then the laryngeal symptoms became rapidly and strongly marked, with increasing frequent suffocative paroxysms. The case looked most unfavourable, but dyspnoea was so urgent that I operated at once, not with such immediate or great relief as is generally the case. I heard nothing of this case for a week, and thought the boy was dead, when Dr Williamson sent to ask me to see him, with the view of removing

the tube. He had gone on without any bad symptoms or complications; but a younger sister had been attacked with the same disease, and sank very rapidly under it.

The fatal cases, to save repetition, I shall divide into two groups, according to the mode of death. Under the first head I range those who died of asphyxia from the exudation developing itself beyond the opening in the trachea, or into the minute bronchial tubes. Of these cases, one was a child about two and a half years old, who had been under treatment for diphtheria when urgent croupous symptoms supervened. The operation was resorted to, and was followed by great temporary relief; but next day dyspnoea returned, and the child died. In another case, that of a fine boy about eight years old, who had suffered but was recovering from slight sore throat, symptoms of croup supervened, and became so urgent, that I was called to operate. This was done, with great relief, and all promised well, when diphtheritic exudation appeared, at first on one tonsil, and then gradually spread; the pulse rose, and he became more restless. Though the tube was kept clear, and changed several times, the breathing became embarrassed; air passed easily out and in, and the walls of the chest seemed to expand; but it was clear from the lividity, restlessness, and dyspnoea, that the exudation must have extended to the minute ramifications of the bronchi, thus preventing aeration of the blood. In the case of a little girl, about five years of age, the symptoms appeared after the disease had lasted for eight or ten days, and were so urgent that I operated immediately. The relief was complete at the time, and for twenty-four hours all promised well: then, suddenly, difficult breathing recurred, relieved by changing and cleaning the tube; but this gradually failed to relieve, and she ultimately died in a suffocative paroxysm, apparently from the exudation having extended downwards.

The second and larger group of fatal cases is formed of those patients who died from the sixth to the twenty-first day after the operation, in consequence of asthenia, the effect of the blood-poison. In some of these there was occasionally the complication of recurring dyspnoea, though more in appearance than reality, the jacitation and restlessness being rather due to febrile excitement. Without detailing every case, I will select two or three typical of the conditions alluded to. The first example I select is that of a previously healthy girl of five years, a patient of Dr Menzies. The history of the case at first was that of ordinary croup, progressing, in spite of active treatment, to threatened suffocation, for which tracheotomy was performed, with immediate relief; and for the first four days everything seemed favourable. Then the pulse became quick, but weaker, with febrile excitement. The white diphtheritic pellicle was first noticed on the pharynx on the fifth day. In the course of that day it spread over the tonsils, uvula, palate, and mucous lining of the cheeks and lips. Next, she was noticed to swallow with difficulty, part of the fluids

regurgitating by the nares, and part passing out through the tube (the tube was one with a small perforation on its convex side): the pulse became more rapid, and she sank exhausted on the eighth day after the operation. In another case of a girl about three and a half years old, a patient of Dr Menzies, I was called to operate on the third day of the croupous attack; but the child had been ailing for some days before Dr Menzies had been called, and the diphtheritic exudation was seen over the tonsils, uvula, and palate, at the time of the operation. Tracheotomy at once relieved the intense suffocative symptoms: the tube was finally removed on the tenth day. There was no recurrence of difficult breathing, and I was only seeing her occasionally, as, judging from past experience in croup cases, I thought her quite safe, and trusted that the quick pulse and febrile state would gradually pass off. I happened to call on her on the eighteenth day after the operation, and found her sinking; the eyes hollow and sunk, the wound showing total want of action, and looking larger than when the tube was removed. I was told Dr Menzies had ordered wine and suitable nourishment; and, on asking if she had taken it, the mother said, Yes, but a great part of it always came out by the wound in the neck and by the nostrils; but she had never mentioned this to Dr Menzies or myself. I hastened to have her fed by the stomach-tube, but she was moribund, and died before wine or food could be administered. In another case, after complete relief of the urgent dyspnoea by the operation, and after the tube had been removed for some days, phagedenic action began in the wound, rapidly extended, and so destroyed the child in thirty hours from its first appearance, and twelve days after the operation. As an instance of the deadly character of the blood-poison of diphtheria, as independent of the mechanical obstruction to breathing, I may mention the following case:—Last autumn I was sent for by Dr Thin of Penicuik, to operate on a child residing near Eddleston. I went, accompanied by the late lamented Dr Pow. Dr Thin told me the symptoms preceding the laryngeal affection had been of a very low malignant form, but that the suffocative condition seemed now so bad as to demand tracheotomy as a chance of relief. We found the child with weak, intermitting pulse, clammy skin, semi-comatose, and livid. I operated as speedily as possible, and thought the child would have succumbed. At first, no great relief seemed to be given to the breathing, but after waiting a little, and stimulating the trachea by passing a probe through the tube, coughing was induced, and some blood, mucus, and a shred of membrane were ejected; the breathing then became easier. After having replaced the child in bed, applied warmth, and given necessary directions, we were about to leave, when we were startled by hearing the little patient, hitherto apparently unconscious, say, with wonderful distinctness, "Gude morning!" I now recollected that the tube I had used was one with the opening on the convex side, so that air would pass through the larynx. I thought the strength of voice a good

omen of returning power, and that possibly the former almost moribund condition of the child had depended on non-aeration of the blood; but on laying my finger on the pulse it was scarcely to be felt, the skin was as cold and clammy as before, and although the breathing had been relieved, the child died in about three hours after the operation.

These may suffice as examples of the modes of death in diphtheria after tracheotomy. As a general rule, death in cases of simple croup occur early on the second or third day after the operation. In diphtheria, life may be prolonged for two or three weeks, and then death occur by gradual exhaustion from the disease; a result either of the blood-poisoning alone, or combined with paralysis of the pharynx, preventing deglutition, and so interfering with nutrition; by a similar affection of the glottis allowing fluids to enter the trachea or wound; or, lastly, by the diseased action attacking the wound and leading to phagedena. I have also known death occur, in the case of an adult, from paralysis of the heart.

The most formidable complications are those dependent upon the peculiar affection of the nervous system, causing paralysis of different organs, such as of the pharynx, giving rise to the inability to swallow, or of the palate, leading to regurgitation of food through the nostrils,—two conditions which have long attracted attention; but I am not aware that the similar affection of the glottis has been adverted to, though I have repeatedly noticed and remarked it to my medical friends. In the first case in which I saw the fluid food come through the tube, I was afraid ulceration between the pharynx and larynx had occurred. When satisfied that such a state had not existed, I thought it might be due to the kind of tube used, with an aperture on its convex side; but I have found it occur equally in cases in which the ordinary tube was used. The fluid must then have passed the glottis without causing any cough, and only have been ejected when it stimulated the bronchi, or trachea below the tube;—in other words, the fine sensitive nerves, which, act as sentinels at the outwork of the air-passages, become paralyzed, and no effort to close the glottis is made during the attempt at deglutition; and so part of the fluid passes down the larynx and trachea, till, by stimulating the bronchial membrane, it gives rise to its own ejection through the tube or wound.¹

I would now, in conclusion, state my impressions as to the propriety of performing tracheotomy in certain cases of diphtheria, or of refraining from its performance in others, derived from what I have observed in cases in my own practice.

¹ This condition seems peculiar to diphtheria, for although I have now had a very large experience of tracheotomy, performed for different kinds of disease or accident, I have never seen the fluid food ejected by the tube except in that disease. And I think it more important on this account, that, whilst our attention is attracted to it after tracheotomy when we see the fluid ejected, the question comes,—Is it not probable that the same paralyzed state of the glottis may allow portions of fluid nutriment to pass into the air-passages in other cases of diphtheria in which tracheotomy has not been performed?

First, then, the great and positive indication for operation is the immediate urgency of the suffocative laryngeal symptoms. When these are intense, and the contracted state of the thoracic parietes shows that little air is entering the chest, the operation is warranted, as affording the only chance of obviating impending death from asphyxia; and this, the only chance, may be given, however unfavourable the prognosis as to ultimate success. The results of the successful cases point to the fact that the more favourable cases for operation are those in which the laryngeal symptoms have commenced early and progressed rapidly, with, perhaps, decided local diphtheritic symptoms, but the febrile or constitutional symptoms less prominent; where, in fact, there is least intensity of the constitutional poison, and where the very acuteness of the local symptoms indicates a certain amount of power.

The cases less suited for operations are those in which the constitutional morbid conditions have existed in a marked form, with fever, quick and weak pulse, for some time before the exudation affects the air-passages, and when the croupous dyspnoea is not very intense. Occasional paroxysms of convulsive cough occurring in such cases, and relieved by the ejection of mucus and membrane, unless increasing in frequency, do not warrant the operation. It is also not warranted in cases in which, to speak generally, the colour of the face and lips, and the state of the chest, show no continued obstacle to respiration. Cases in which the diphtheritic affection has supervened on scarlatina, measles, or gastric fever, or in which there is marked submaxillary swelling, are very unfavourable. I should not like to deny the chance of life, afforded by operation in threatened asphyxia, even in these circumstances, because I have seen it give great temporary relief, and it may prove successful; but I feel bound to say that I have not as yet seen any recovery, either in diphtheria or simple croup, where these conditions existed. In cases in which the disease has crept slowly on before the croupous symptoms began and in which difficulty of swallowing exists, that complication seems to me a contra-indication of operation, as we can then scarcely hope to keep up the nutrition of the patient. But we must look to the exact significance of this symptom in diphtheria. In cases of acute and chronic laryngitis, as well as in croup, difficult deglutition is often a very marked symptom; but, so far from being a contra-indication to tracheotomy, it is an indication for its performance, because in such cases the difficulty arises from the action of the parts in swallowing exciting the laryngeal spasm. In these cases it excites cough and other symptoms of laryngeal irritation; but the dysphagia of diphtheria results from paralysis of the palate, pharynx, and neighbouring parts. There are no convulsive efforts excited to expel the food,—it simply runs back, partly from the mouth, partly, by regurgitation, by the posterior nares; and, as we see in cases in which it comes on subsequently to the operation, part of it may pass through the larynx into the trachea. Hence I consider the presence of this condition in diphtheria most unfavour-

able, both as an indication of the intensity of the poison, and also and specially as presenting a difficulty to our afterwards nourishing the patient. When it comes on after the operation, we must do our best to meet it by the use of the stomach-tube ; but I can only say that such treatment has never proved successful in my own cases.

Lastly, in regard to early operation as promising greater chance of success, whatever the greater chances may be in ordinary croup, I can see no grounds on which we can hope for its being useful in diphtheria. Indeed, I do not think the operation warrantable until the laryngeal obstruction is well marked ; because the operation superadds new sources of irritation and risks of its own, such as the disease attacking the wound ; and thus the operation might deprive the patients of chances of recovery which they might otherwise have had.

I trust I need hardly say that I do not mean to advocate delay when the laryngeal symptoms are marked and progressing ; for then unnecessary delay entails the risk of the supervention of congestion or œdema of the lungs, and so diminishes the chances of success of the operation.



ARTICLE II.—*The Epidemics of the General Prison at Perth, and of the City of Perth, Compared and Contrasted.* By J. BRUCE THOMSON, Resident Surgeon to the General Prison.

(*Read before the Perthshire Medical Association.*)

It is generally admitted that the presence, or at least the frequency and fatality of epidemic diseases, are proofs of a bad sanitary police, and *vice versa* ; and on this account I regard the demonstration set forth in this paper as of high interest to the public and the profession.

The city of Perth and the General Prison at Perth, have always presented a singular contrast in regard to Zymotic diseases. Situated within a few hundred yards of each other ; in a district much ameliorated by cultivation and agricultural drainage : irrigated by a majestic river and streams as yet unpolluted by the refuse of factories ; bounteous in produce, beautiful in varied scenery ; one would say, *primâ facie*, here are the prime elements to increase the sum of social health, mitigate disease, and extend human life ; and yet while this is the case with the criminal, it is the opposite with the free civil population. Immunity from Zymotics is uniformly noted in the annual reports of the General Prison at Perth ; the city of Perth is distinguished, for the severity of its epidemics, among the great towns of Scotland. Here, then, is an anomaly of paramount interest worthy of the earnest consideration of our Medical Association, and of the municipal authorities of the city.

I propose to bring a few facts and figures before you under the following arrangement :—1st, Of the epidemics of the General Prison for Scotland ; 2^d, Of the epidemics of the city of Perth : comparing and contrasting the vital statistics of the city and of the prison *en passant*.

1st, I offer a brief sketch of the epidemics which have visited the General Prison at Perth since its opening in the year 1842.

In 1842 no infectious disease existed within the prison, and no complaint which could be attributed either to its site or state.

In 1843 no infectious disease and no epidemic appeared in the prison; one case is reported fatal from fever, and the probable cause of the disease is given as "weakly constitution and irregular life."

In 1844 one prisoner died of a violent attack of British cholera, which was prevalent in the city of Perth at the time.

In 1845 no epidemic.

1846 was remarkable for an outbreak of scurvy, which prevailed more or less severely for about four months.

The winter of 1845-46 was of unusual mildness; a moist atmosphere prevailed, with scarcely any frost.

"The failure of the potato crop, and the deterioration of almost all vegetable productions (I quote from the Surgeon's Report), was the most obvious result of the unnatural state of the weather. It also caused a great increase of sickness over the country, which also visited the General Prison. The diseases at first were British cholera and diarrhoea, but it finally settled down to scurvy." I shall quote a few sentences *verbatim*, from the surgeon's (Dr Malcom's) report for the year 1846. "Scurvy is a disease which has long been known as attacking persons living entirely on salt provisions, without any proper quantity of fresh or vegetable diet. It likewise attacks those who are almost exclusively fed on vegetable or farinaceous substances, and this I consider to have been the cause which gave the disease, consequent upon the state of the atmosphere, the tendency to scurvy in the General Prison. In the earlier cases it assumed a formidable shape; but as soon as I observed its appearance, I adopted such means as I thought most likely to stop the disease. These were, butcher-meat, milk, beer, wine, and other nourishing articles of diet. My practice was perfectly successful, and I not only did not lose a single person, but all recovered, and no case occurred after November." In relation to this attack of scurvy, I must observe, that in March 1845, as an economical experiment, treacle-water was introduced as a substitute for milk at breakfast, and a few months thereafter the same was done at supper, and it does appear that this had much to do with the severity of scurvy. Since that time the dietary has been materially improved, and a case of scurvy is rarely seen in the General Prison.

In 1847, towards the end of November, influenza, which was prevalent in Scotland, indeed throughout Europe, broke out in the General Prison, and ran its course rapidly, having in the space of three weeks attacked eighty-six persons. The disease, although severe at times, yielded to treatment, and no patient was lost. It altogether disappeared by the 20th December.

In 1848 smallpox occurred among the servants of the prison, and two cases appeared in the Lunatic Department, which were severe; but both recovered.

In the month of October, Asiatic cholera made its appearance in Scotland; and in the prison in November, and early in December, were a good many cases of severe diarrhoea which was difficult to check; but all attacked eventually recovered. At the onset of cholera in Scotland, the surgeon recommended every prisoner, male and female, to be clothed with flannel, and butcher-meat to be added twice a-week to each individual who was not receiving extra diet.

1849 was one of our great cholera years, and very fatal in the city of Perth; yet it passed over the General Prison. There were many cases of vomiting, bowel-complaint, and cramps, but no cholera, and no death from this or any acute disease.

The report for 1850 says, "the prisoners have enjoyed the immunity from sickness of the general population, and, with the exception of trifling cases of colds and bowel-complaints, there has been almost no disease except in those who have come in affected with it."

1851 and 1852 had slight visitations of influenza, without any fatal result.

In 1853 one fatal case of scurvy in a prisoner, from a broken-down constitution.

1854 was another great cholera year. Choleraic diarrhoea was extremely prevalent in the prison, 65 cases being placed on the register of sickness, and of these 3 died. Two were insane, and refused all medicine. These cases were not in the main prison, but in the Lunatic Department, which is a branch prison.

In 1855 diarrhoea and influenza prevailed, and one prisoner died of the latter disease.

During 1856, 1857, 1858, 1859, 1860, 1861, and 1862, there occurred nothing of importance, except at times slight autumnal diarrhoea and influenza. No deaths from epidemics during these years.

In 1863 we had five cases of epidemic disease; one of chicken-pox and four of gastric fever, and one death from the latter disease.

Such is a brief abstract of the history of epidemic diseases in the General Prison at Perth, since it was opened in 1842; the sum of all the deaths from Zymotics for twenty-two years being nine,¹ which bears a very small proportion to the sum of deaths from all causes, amounting to 152.

Here is a Table showing the prison population, the daily average

¹ Perhaps several of these should not be called epidemic cases. The case of fever and the case of scurvy were the result of worn-out constitutions, and so were probably two of the cases of diarrhoea. Nevertheless, I have counted them as of Zymotic character.

population, with the annual number of deaths from all causes, as well as epidemics, from 1842-63 inclusive:—

Years.	Total Prison Population.	Daily Average Population.	Annual Deaths.	Percentage on daily average Population per Annum.	Deaths per 1000.	Deaths from Epidemics.
1842	404	404	5	...	...	...
1843	627	278	6	...	...	1 from fever.
1844	563	217	3	...	...	1 from British cholera.
1845	541	233	3	...	...	...
1846	600	322	7	...	...	...
1847	672	332	1	...	...	...
1848	682	301	5	...	...	1 from diarrhœa.
1849	737	363	2	...	...	...
1850	810	385	3	...	...	...
1851	784	306	4	...	...	...
1852	796	434	8	...	...	...
1853	876	459	4	...	...	1 from scurvy.
1854	1,045	580	9	...	...	3 from diarrhœa.
1855	1,134	498	10	...	...	1 from influenza.
1856	998	583	11	...	...	...
1857	961	593	12	...	...	...
1858	982	561	10	...	...	...
1859	1,085	632	12	...	...	...
1860	1,074	675	16	...	...	...
1861	1,065	637	8	...	...	...
1862	1,105	688	5	...	...	...
1863	1,241	714	8	...	...	1 from gastric fever.
				1.49	15	9

Thus, it appears that fifteen of the above twenty-two years show no fatality from epidemics; and *during the last eight years only one death from epidemics.*

The foregoing statements show that Zymotics very rarely visit the General Prison for Scotland, and when they do so are comparatively mild in character and attended by a low rate of mortality. All this is the more remarkable when we consider the class of inmates—their history and habits—their hereditarily and habitually vitiated constitutions—the effects also of long years of imprisonment as likely predisponents to prevailing diseases. Consider also the closeness of the prison population, and in spite of the best ventilation an oppressive prison atmosphere, which is very different from the free air externally. Further, we must call to mind the fact, that long after the reform of our prisons was initiated, the prisons of this country were the pest-houses from which were wont to emanate jail fevers of the most infectious and dangerous kind; attacking the judges of the criminal courts, officials, philanthropic visitors, and all who came into contact with the criminal classes. The truth is, that the problem is only being solved, *how far it is possible under the separate system to carry out the long*

sentences of convicts without serious injury to their health? An answer, so far as the physical health is concerned, is given in the death-rate statistics of the General Prison. The result is now before us of a great experiment, and of what can be done by proper exercise, generous dietary, and sanitary improvements; and I hold the success of this experiment to be one of the greatest triumphs of medical science, aided by humane and hygienic regulations.

I proceed, by way of *per contra*, to offer a few vital statistics of the epidemics of the city of Perth, and I shall try to draw a fair parallel betwixt the city and the prison. My information as to Perth city is derived from two sources.

a. The City Mortality Bills previous to 1855, as found in the City Records; and,

b. The Registrar-General's Reports from 1855-63.

The records of the City Mortality Bills prior to the Registration Act were searched by myself, and I found the death-rate very high from 1849-54; being augmented almost every alternate year by some prevalent epidemic. For example, during the great cholera years 1849 and 1854 the city mortality was at the ratio of 1 in every 27 of the population.

During 1849 the deaths from cholera were	.	.	.	188
... 1854	...	...	...	180
Total in these two years,				368

Besides those registered as cholera, no doubt there were many more called by the names of dysentery, diarrhoea, bilious vomiting, and the like.

Compare these results with those of the General Prison:—

Averaged Population of the City of Perth.	Daily Population of the General Prison.	No. of Deaths in Perth City.	No. of Deaths in the General Prison.
In 1849, 23,000	363	...	...
... 1854, 23,000	580	...	...
46,000	943	368	3

Giving the deaths of the citizens from cholera	1 in 125
... prisoners	1 in 314

But I should perhaps not take the average daily, but the whole prison population, because all who passed through the prison remained long enough to become liable to the attack of the prevailing epidemic.

The prison population was,

In 1849	.	.	.	737
1854	.	.	.	1055
Total,				1792

And this would give a death-rate of 1 out of every 594 prisoners, making the deaths of citizens about five times greater proportionally than of prisoners. This shows a startling disparity, and it is for us to inquire what in the case of the prison prevented the fury of the Asiatic cholera, and what in the city fostered and encouraged its virulence.

Let us now look into the reports of the Registrar-General. It is to be kept in mind that prisoners are chiefly of the army ages—adults—very few being infants or juveniles. The local Registrar has no data by which to show the number of citizens of adult age, by way of comparison; and I shall therefore confine myself to those epidemics which affect the adult population, merely mentioning the general results of epidemics, and comparing the particulars of such epidemics as adults are liable to. The instance of cholera is a fair enough case.

Leaving out 1855, the first year of the Registrar-General's Reports, which may be looked upon as imperfect, I take each year seriatim, beginning with 1856. In the year 1856, it is stated that croup alone caused 5 per cent. of the deaths, which is referred to the low level, the alluvial soil, and the humid state of the atmosphere. The deaths from all epidemics in the city were 119. Those which might be expected to affect those in prison as well as the city were—

Smallpox,	.	.	.	4	Deaths.
Diarrhœa,	.	.	.	15	...
Dysentery,	.	.	.	8	...
Influenza,	.	.	.	1	...
Typhus,	.	.	.	11	...
Total,	.	.	.	39	...

In this same year there were only a few mild cases of influenza in the General Prison, and no death from any epidemic.

1857 showed 33·5 per cent. of the deaths in the city to be from Zymotics, and this was the highest ratio that year in all the great towns of Scotland. There were from scarlatina alone 161 deaths; from croup, 26; total deaths from epidemics, 262.

From Smallpox,	.	.	.	.	2
... Diarrhœa,	.	.	.	.	25
... Dysentery,	.	.	.	.	8
... Influenza,	.	.	.	.	2
... Typhus,	.	.	.	.	15
Total,	.	.	.	.	52 deaths

from epidemics to which adults are liable as well as children.

Diarrhœa and influenza were more than usually prevalent in the General Prison, yet there were no deaths from any epidemic in 1857.

In 1858 croup was, in the city, more severe than in the other

large towns. Measles, scarlatina, and hooping-cough prevailed. The deaths from all epidemics were 144.

Deaths from Diarrhoea,	.	.	.	15
... Dysentery,	.	.	.	5
... Influenza,	.	.	.	1
... Typhus,	.	.	.	11
Total,				32

In the General Prison, during the whole year, no epidemic worthy of notice, and no death from any epidemic.

During 1859 hooping-cough alone carried off 43. The total deaths from epidemics in Perth, 117.

From Smallpox,	.	.	.	.	1
... Diarrhoea,	.	.	.	.	17
... Dysentery,	.	.	.	.	6
... Cholera,	.	.	.	.	1
... Influenza,	.	.	.	.	1
... Typhus,	.	.	.	.	15
Total,					41

Still, in the General Prison, no epidemic of consequence, and no death from epidemics.

In 1860, total epidemic deaths in the city, 135.

Smallpox carried off	.	.	61
Diarrhoea	...	.	19
Dysentery	...	.	2
Typhus,	...	.	21
Total,			103 deaths

in the city from diseases likely to affect prisoners as well as civilians; and yet, in the General Prison, only a few mild cases of diarrhoea, and not a single death from any epidemic.

1861 was a severe epidemic year for Perth, and the general death-rate exceeded that of all the eight great towns of Scotland, except Glasgow and Dundee. All deaths from Zymotics amounted to 168, or nearly one-fourth of all the deaths. Amongst these were—

Smallpox,	.	.	.	.	5
Diphtheria,	.	.	.	.	1
Diarrhoea,	.	.	.	.	32
Dysentery,	.	.	.	.	38
Cholera,	.	.	.	.	2
Typhus,	.	.	.	.	15
Total,					93

Yet this was an extremely healthy year among the prisoners of the General Prison, and none of them died from epidemics.

During 1862 the total deaths from epidemics amounted to 151. Hooping-cough alone cut off 60.

Deaths from Diphtheria, . . .	6
... Diarrhœa, . . .	6
... Influenza, . . .	2
... Scurvy, . . .	2
.. Typhus, . . .	32
Total, . . .	48

In the General Prison no deaths from epidemics, and no epidemic noted.

In 1863 the deaths from all epidemics were 155. Among these were—

Smallpox, ...	2
Scurvy, ...	1
Diphtheria, ...	13
Diarrhœa, ...	22
Dysentery, ...	2
Typhus, ...	40
Total, ...	80

In this last year, in the General Prison, one death from gastric fever.

The foregoing statement shows that certain Zymotics are never absent from Perth city, especially typhus, diarrhœa, dysentery, smallpox. Take the sum of these during the last eight years,—viz., 1856–63—

	Typhus.	Diarrhœa and Dysentery.	Smallpox.
1856, . . .	11	23	4
1857, . . .	15	33	2
1858, . . .	11	20	0
1859, . . .	15	24	1
1860, . . .	21	21	61
1861, . . .	15	72	5
1862, . . .	32	6	0
1863, . . .	40	24	2
	160	223	75

Take the sum of all the epidemics from which prisoners might have been expected to suffer as well as the citizens during these eight years, and we have—

Deaths in 1856, . . .	39
... 1857, . . .	52
... 1858, . . .	32
... 1859, . . .	41
... 1860, . . .	103
... 1861, . . .	93
... 1862, . . .	48
... 1863, . . .	80
Total, . . .	488 deaths

in the city, and not one death from these diseases among the prisoners. Calculating the deaths at about one tithe of the patients, and

there must have been at least 4880 cases of these epidemics in the city, and not a single case of typhus or smallpox, even on the register of sickness—only a few mild cases of diarrhoea in the General Prison.

It may seem that I have insisted too much on the contrast betwixt the city and the prison; but I am anxious to set forth the fact strongly, that Perth is liable to epidemics; and, looking back to the history of the Fair City, I beg to quote a passage from a pamphlet which I published recently:—

“As to our ancient records, they must be regarded as very imperfect; but we have the following authentic reports. In 1512 the pest visited Perth with great devastation, and the account of it is preserved in the city records. The deaths have been estimated at from one to two thousand. In 1584, beginning on the 24th September, and continuing up to August 1585, we have another devastation of this scourge, and betwixt these dates 1427 persons died (Chron. Perth). In 1587 we have further notices of its prevalence, but no particulars of the deaths. Perhaps this was the lingering remains of 1584–5, prolonged, as we often see our epidemics of the present day, beyond those in other cities. In 1590 it is noted that there was ‘a plague among the bestial.’ In 1606 it appeared again among the people, and in 1608 an outbreak began on August 29, and continued till the ensuing May, and in reference to which the Chronicle of Perth says—‘Wherein deit, young and auld, five hundred persons.’

“In 1645 was our greatest calamity from plague, and 3000 inhabitants were cut off in a very brief space; and for several years afterwards did the plague rage with fury. Some streets were wholly forsaken (one especially, betwixt the church and the Meal Vennel, was without a tenant); all trade, manufactures, and building ceased, and at length the city became almost depopulated.

“In 1666, the year after the great plague in London, we have another visitation of plague spoken of; but the date is probably wrong, as we have no record of the plague being in Scotland after 1665, when it destroyed about one-third of the inhabitants of London. Nevertheless, in a paper in the *Archeologia Scotica*, I. 108, by Major Barry of Lednoch, referring to the tradition of Miss Bell and Miss Gray, we are told that the date of their story was when the plague broke out in 1666. It is much more probable that 1645 was the date of the tender tale of Bessie Bell and Mary Gray, who fled from the city of the plague, and built their rustic bower near to where they sleep on the classic braes of Lednoch.

“These visitations of the great pest are something very alarming, and appear to me replete with greater horror and death than belong to the epidemic ravages of any of the other ancient towns of North Britain. A treatise, by *Maister Gilbert Skeyne, Doctour in Medicine*, on the pest, gives the views of the learned in those days. It proceeds, in his opinion, ‘from a corruption in the air whilk has strength and wickedness above all natural putrefaction.’ Stagnant waters, corrupting animal matters, and filth—extraordinary humidity of the atmosphere—are dwelt upon as causes. These are quite in accordance with the intelligent experience of modern days, where severe diseases appear in an epidemic form.”

The conclusions to be drawn from these statements are,—1st, That the General Prison for Scotland is conspicuous for its exemption from epidemics; and, 2dly, That the city of Perth is subject to an excessive mortality from epidemics.

The immunity of the General Prison from epidemics cannot arise from its different position from the city. The elevation of the former cannot exceed that of the latter by more than twenty feet, but

it is perhaps better situated for general ventilation than the city. The superior health of the prisoners cannot be due to any condition of body, rendering them less predisposed to atmospheric influences than the citizens; for the inmates of prisons are generally vitiated in their physical and mental state by bad habits of life and hereditary constitutional taints, and the fever and the fret of imprisonment are certainly depressing to the vital powers and predisposing to epidemic attacks. Even the atmosphere of a prison, under the best possible ventilation, is not equal to the free air without, and must be unfavourable to health. Something in favour of prisoners is perhaps due to the cellular arrangement, by which certain classes are kept in separation; and by this separation being strictly enforced, the spread of infection or contagion may be greatly prevented. But a large proportion of the prisoners are in association more or less, and this is given to all after nine or twelve months' separation. We are driven to the conclusion that cleanliness, good dietary, regimen,—perhaps, more than all, the adequate drainage and ventilation introduced by those who had the superintendence of the prison at its construction,—in fine, excellent hygienic and sanitary police, have placed the prisoners of the General Prison in a condition of body and circumstances which are prophylactic, and act as preventives to the visitations of Zymotics.

In regard to the city, the very opposite is the case. Its *locale* is evidently bad; it is surrounded on all sides by heights, among which it is shut out from free ventilation; it is frequently enveloped in fogs and dense vapour; the drainage is almost wholly defective; its streets are filthy; instead of having underground drains—except in one principal street—the site of the Fair City is generally honeycombed with sinks and cesspools, so that at all times the air is loaded with impurity. We know that filth and epidemic fevers attend upon each other as cause and effect, and the insanitary condition of the citizens is such as at any time to predispose to the ravages of epidemics.

I am satisfied that it is right to bring this subject before the medical profession, as it is through them that public opinion is to be enlightened regarding the importance of sanitary measures. I know, also, that in the presence of such epidemic scourges as I have referred to, all the resources of our art, curative or prophylactic, are useless, and the efforts of medical skill are paralyzed by the malignant diseases that beset us. Therefore medical practitioners ought to endeavour to stimulate local patriotism, so as to lead to the removal of the causes which undermine the public health, and impair the material and the moral well-being of the social body.

ARTICLE III.—*Observations in Clinical Medicine.* By J. WARBURTON BEGBIE, M.D., Physician to the Royal Infirmary.

Favus (Tinea Favosa)—its Treatment by Depilation.

THIS interesting form of cutaneous affection, the truly parasitic nature of which is now generally admitted, has been of frequent occurrence in the hospital wards during the whole period of my service as physician. I have nothing to add to the accurate as well as detailed accounts of the disease which are to be found in the writings of such authors as Devergie, Hebra, and Bazin, on the Continent, and of Mr Erasmus Wilson and Dr M'Call Anderson, in our own country. The experience I have had of Favus has convinced me of its intimate connexion with filthiness of the head and body, of its ready communicability when favoured by the pre-existence of dirtiness, the predisposing cause of most importance, in the person exposed; and, lastly, of its eminently satisfactory treatment by one plan, and by that one plan only. I contrast, very favourably for the process of depilation, the different means for the cure of Favus affecting the scalp, which have been formerly witnessed, at various times, and in various places—and likewise employed by myself; and now, having obtained results so completely satisfactory, by the employment of depilation,—practised very nearly as M. Bazin has recommended it, I have relinquished all other expedients for effecting the removal of this frequently loathsome disease, and can confidently recommend depilation as a most efficient remedy. Coupled with the depilatory process, however, must be, first of all, the thorough cleansing of the scalp, and then the employment of what are likewise styled *parasiticide* remedies, or still more strictly in relation to Favus, a disease dependent on the existence of a plant or vegetable-like parasite—*phytoides*. Of these a solution of the corrosive sublimate (one or two grains to the ounce of water, with the addition of a little alcohol or hydrochlorate of ammonia), the oleum juniperi pyrolignicum (huile de cade of the French), and the subsulphate of mercury (turpeth mineral), in the proportion of a scruple or half a drachm to the ounce of prepared lard, are the chief; and so long as the act of depilation is in progress, the diligent use of one or other of these parasite destroyers is to be enjoined. I have found the empyreumatic oil of juniper to be most serviceable; and from the year 1850, when I first saw it in use in the St Louis Hospital at Paris, have been constantly in the habit of employing it in the treatment of the parasitic, as well as of the scaly, affections of the skin. The precise plan pursued in the treatment of all the cases of Favus recently under my care, is as follows. On reception, the patient has at once a hot bath, and both head and body are as thoroughly as possible cleansed, with the aid of soft soap; the hair of the head

is then cut to the level of the Favus crusts, and, as Bazin has directed,¹ the oil of juniper (before mentioned) is applied by means of a thick camel-hair brush. On the succeeding day, poultices of potato-starch are placed over the head, and diligently continued till the complete separation of the crusts is effected. This done, the juniper oil is re-applied; and on the day following, the process of depilation commenced. While this is continued, the daily use of one or other of the phyticide applications is being made. Care should always be taken that the depilation is complete, and that it is persevered in until the growth of healthy-looking hairs over all parts of the scalp is observed. Thus the treatment may require *many weeks* for its thorough execution; but when it is held in remembrance that the cure effected is radical, its lengthened duration may well be tolerated.

The following, one of the most recent examples of Favus under my care, in which the trunk as well as the scalp was affected, will serve as a further illustration of the treatment now described:—

E. S.,² æt. 17, single, living in her sister's house at M., near Edinburgh, admitted into Ward XV., Royal Infirmary, in November 1863, suffering from well-marked Favus of the head and upper part of the back, which she says has existed since infancy. By the application of poultices, and by washing with black-soap, her head has frequently become so clean as to lead her friends to believe that they had effected her relief from this offensive complaint; but in seven or eight days the scalp had again become covered with yellow crusts, emitting the peculiar and characteristic odour. The patient has on several occasions been under medical treatment, but with a like result. She has always been well clothed and properly fed, taking animal food three or four times a-week. She has no other ailment, and has always enjoyed good health. Till within the last two years the disease was confined to the head; but about that period a similar eruption began to show itself on the upper part of the back, and has since then extended over both shoulders. At present the scalp is almost entirely covered with dirty yellow crusts, and over it several patches of baldness exist. The eruption on the back possesses a brighter yellow colour than that on the head, extending on the left side from the top of the shoulder to the waist, and, transversely, from about the angles of the ribs to the spine; the denser crusts being situated over the scapular region. The patient complains of much itching and uneasiness in the parts affected, but of no pain. The head and back having been carefully washed, while the hair was closely clipped on the former, the juniper oil was applied, and thereafter the removal of the crusts effected by poultices of potato-starch. This done, depilation was commenced, and at the same time the

¹ Leçons Théoriques et Cliniques sur les Affections Cutanées Parasitaires. Professées par le Docteur Bazin. Paris, 1858. (See page 138.)

² Reported by Mr S. E. Roberts, clinical clerk.

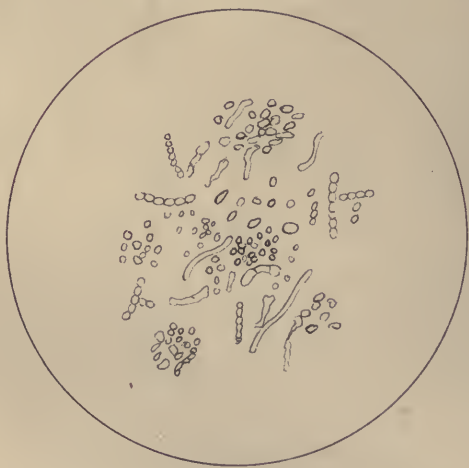
use of the following lotion, for both the head and back :—℞ Hydrargyri Sublimati Corrosivi, gr.xij., Ammoniã hydrochloratis, ℥i., Aquæ fontis, ℥vj.—*Solve*. The first depilation in this case was completed in about three weeks; it has been continued till nearly the present time (13th February), so as to effect the removal of all the unhealthy-looking hairs which have re-appeared. Latterly, the following application, which I can strongly recommend as a phyticide, has been employed for the head, instead of the corrosive-sublimate lotion :—℞ Saponis Mollis, ℥ij., Olei Juniperi Pyrolignici, Spiritus Rectificati, Glycerinã, ā ā, ℥iv.—*M*. The patient still remains in hospital; but the appearance of both head and back is eminently satisfactory, while the hair over the former is now appearing in a healthy and vigorous condition. I see no reason to doubt that in this case, as in many previous examples, the recovery will prove complete and lasting.

Herpes Circinatus (Tinea Circinata) with Favus.

The association of Tinea Circinata, a parasitic affection frequently styled ringworm of the body,—to distinguish it from Tinea (Herpes) Tonsurans, ringworm of the scalp,—with Favus, has been noticed, more particularly by Hebra, who has delineated the two eruptions as occurring at the same time in the same subject.¹ The case I am about to relate appears to me of interest—*firstly*, as an example of the co-existence of two affections supposed by Bazin and others to be dependent on the presence of separate and distinct vegetable parasites. In Favus it is the well-known Achorion Schoënleinii, in Tinea Circinata the Trichophyton Tonsurans, which is met with. *Secondly*, the case is pre-eminently illustrative of the communicability of the former disease by something short of actual contact. And, *thirdly*, it exhibits the cure of both affections resulting without the employment of parasitocides, or indeed of any remedies,—a circumstance due, I believe, to the uncongenial nature of the soil in which the parasite or parasites found themselves deposited. The accompanying lithographic plate, executed by Mr Schenck, from a sketch furnished by Mr Hamilton Livingstone, a member of the clinical class, will convey a just conception of the situation and appearance of the eruptions. There accompanies this plate a drawing of the Achorion found in one of the crusts.

M. Y., æt. 40, widow, a washerwoman, resident in the country, was admitted to Ward XV., on the recommendation of Dr Junor of Peebles, in November 1863. She is the subject of sore throat and of a cutaneous disorder resembling Rupia Prominens, but chiefly complains of severe rheumatic pains of several joints, greatly aggravated during the night. She was at once placed under a constitutional treatment, consisting mainly of cod-liver oil, with iodide of

¹ See a plate in Hebra's Atlas of Cutaneous Diseases. To be found also in the earliest fasciculus, issued by the New Sydenham Society.



potassium; and speedily the cutaneous disorder underwent a very favourable change, when, the crusts having been removed by poultices, a weak solution of nitrate of silver—five grains to the ounce of water,—or the black wash was applied to the different sores. The Rupia ulcers which required most attention were situated on the back and on the upper and lower extremities. One, in particular, was seated on the outer side of the ankle of left foot, immediately behind the external malleolus. This foot she exposed morning and evening for the purpose of dressing the sore, removing a stocking and bandage with which it was covered. The patient is a person of cleanly habits, and the surface of the body indicates the attention which she has paid to ablution. About the middle of December, the patient's notice was attracted to the condition of the skin in the neighbourhood of the internal left ankle, by feeling a considerable degree of itching, and on examination, she found it red and inflamed in appearance. Thinking that this part was about to become the seat of a fresh Rupia crust, she said nothing about the circumstance for a few days; but having by that time observed the circular form of an eruption which had become developed, she directed my attention to the appearance at visit on the 23d of December. I immediately recognised a very characteristic circle, or rather circles, of Herpes Circinatus (*Tinea Circinata*). Watching the progress of this eruption from day to day, I was much interested to find, in the course of five or six days from its first recognition, the appearance of two or three—the number afterwards reached seven or eight—most distinct, yellowish, cup-shaped crusts of favus. At this period I made a very careful inquiry into the whole circumstances of the patient since her admission to the hospital, and with the following result. In the same ward, during the entire period of her occupation of a bed, there had been two well-marked cases of Favus,—one of these being that of the patient E. S., already briefly detailed in this report, the other that of a little girl, J. M'N., æt. 8, who had laboured under the disease, affecting the head only, since her second year. This little patient, it was distinctly ascertained, was frequently in the habit of visiting the woman M. Y.; and it is conjectured, with, I think, every show of probability, that while so engaged, some of the sporules of the Achorian may have fallen from her head upon the foot of M. Y., which she had at the time exposed, for the purpose of cleaning the sore on its external surface, and of applying to it the lotion of nitrate of silver. The precise relation of the *Tinea Circinata* to the Favus may be difficult of explanation, but the intimate co-existence of these two parasitic disorders is one of the most interesting features in this very illustrative case. The parasite existing in the former affection is believed to be identical with that found in *Tinea* (*Herpes*) *Tonsurans*—ringworm of the head,—and in *Sycosis* (*Mentagra*)—ringworm of the beard—the so-called *Trichophyton Tonsurans*. The microscopic differences between the Achorian and the *Trichophyton* are, however,

confessedly not very remarkable. The former is composed of sporules, empty tubes (the mycelium), and tubes filled with sporules; the latter is characterized by the presence of spores, with very few if any tubes. It is, however, consistent with my own observation, that in the examination of some Favus crusts, sporules alone are to be detected, just as Mr Erasmus Wilson states that mycelium is sometimes to be found in the trichophyton.¹ Hence, probably, it results that so competent an authority as Hebra reduces the number of cutaneous fungi to one, conceiving the differences in the microscopical characters of the four usually recognised parasites—the achorion, the trichophyton, the microsporon furfur, and the microsporon Audouini—to be determined by the peculiarity in structure of the part of the skin which is their seat. However this may be, I had no difficulty, in the present instance, in detecting the Achorion, presenting the appearance of well-marked oval and round sporules, with very few tubes, in the small yellow crusts which appeared on the surface of the erythematous patch lying within the distinct vesicular circles of Herpes. And so, likewise, when the usual desquamative change had succeeded the earlier appearance of the Tinea Circinata, in the cuticular scales gently removed for microscopic examination by means of a blunt instrument, I observed numerous sporules, but neither empty nor filled tubes—precisely the same appearance as I have frequently seen before, and last witnessed in a case of ringworm which occurred this week in the hospital. The limitation of the two affections in this case to a very small surface of the skin—their appearance on no other part of the body separately—the immediate succession of the Favus crusts to the annular eruption of Herpes—the exposure of the patient herself to the contagion (or communication short of actual contact) of Favus, but not, so far as can be ascertained, to that of ringworm—and finally, the joint and complete disappearance of the two eruptions, all traces of which have now vanished—exhibit, I think it must be admitted, a very intimate connexion between the two disorders in this particular instance. As an evidence of the communicability of Favus, the case, indeed, is one of very great value. It is also valuable, as showing that even that intractable disorder (well named *Tinea*) may come to a spontaneous termination. Essentially it is a disease of the hair-follicles. Developed in the situation in which it occurred in this case, the fungus speedily dies, as it were, a natural death. The same remark applies to Herpes Circinatus, which not unfrequently requires no decided treatment.

¹ On the Phytopathology of the Skin, and Nosophytophytoderma, the so-called Parasitic Affections of the Skin.—*British and Foreign Medico-Chirurgical Review*, January 1864.

ARTICLE IV.—*Brief Notes of Twenty-four Cases of Diphtheria.* By
G. STEVENSON SMITH, L.R.C.S.E., Letham, Fife.

As much darkness still envelopes the nature of this most fatal malady, and great difference of opinion prevails as to what line of treatment should be carried out, I think it is the duty of every one who has met with cases of diphtheria faithfully to record the results of his experience; so that, by a careful study and comparison of the effects of different systems of treatment, we may in the end come to know what agents have really most power in checking the progress and counteracting the evils of this distressing disease.

From the end of June 1862 till the present time, twenty-four cases of diphtheria have come under my care. Of these, thirteen, or more than one-half, died, and eleven recovered. Most of the cases occurred in young persons under fifteen years of age; but two of the patients were upwards of thirty.

First cases occurred in conjunction with Scarlatina.—My attention was first attracted to the existence of diphtheria in my district during the prevalence of scarlet fever, in the summer of 1862. In almost all the fever cases there was immense swelling of the glands of the neck, with great nervous prostration; and in one family, where, out of five who were seized, three died, I was perfectly convinced that in two of the cases, at any rate, death resulted from diphtheria. In them the cervical glands were enormously enlarged, and of a stony hardness, while the throat, for some days before death, was partially lined by a dense layer of false membrane, which no amount of brushing could detach. The voice got husky, the breathing laboured, and death from asphyxia occurred. In the two members of that family who survived, the recovery was very tedious, and although not attacked by diphtheria, in both of them secondary abscesses formed in various parts of the body, and in one of them there was albuminuria accompanied by violent convulsions. This outbreak occurred in one of a range of four cottages; yet, strange to say, no other case, either of scarlatina or diphtheria appeared there. Nor did I meet with any other cases in which the two diseases were combined. Nevertheless, while I do not admit that the malignant sore throat of scarlet fever is similar in nature to diphtheria, there are many points of resemblance between the two affections; and I think it is extremely likely that in future the two will be found more frequently associated. Shortly after these cases occurred, at various places, and at longer or shorter intervals, I met with examples of true diphtheria.

General Symptoms.—At first I generally found that the patient was paler than usual, with a bright and anxious eye, the tongue coated, the pulse always small and quick. Then a peculiar change in the voice was noticed; it had an unusual resonant ring, and,

along with this there was a constant tendency to hawk up something that would not come. The glands at the angle of the jaw were invariably, on one side or on both, tender and enlarged. Although at the outset the patient did not look very ill, and was generally out of bed, still in a short time the limbs got feeble, and there was considerable prostration. In several cases I found the urine highly albuminous. One of them died with all the symptoms of uræmic poisoning, after the throat affection had got nearly well. Another had paralysis of one side of the body, which came on after the throat was better, and continued for many weeks, but ultimately wore off completely. This was the only case, amongst the eleven who recovered, in which the disease left any serious illness behind it, although most of the patients complained for a time of pains in the back and legs.

Appearance of the Throat.—On carefully examining the throat the following appearances were presented:—One or both tonsils were red and swelled; the uvula also was red and elongated, with its point tilted towards the tonsil that was most enlarged. Generally on the anterior surface of one of the tonsils or uvula, sometimes posteriorly, or just between the tonsil and uvula, there was an irregularly shaped slightly excavated ulcer, with ragged edges, which was partially filled up or covered over by a dirty yellowish, chamois-leather-like, patch of membrane. In some cases, however, there was no apparent abrasion of the mucous membrane, and, instead of the patch, there was a whitish or yellowish filmy-like streak, as if a fine camel's-hair pencil, dipped in milk, had been lightly drawn across the tonsil.

In one or two cases I observed that the false membrane, though firmly adherent at the point where it first appeared, presented a free margin, so that, by inserting a spatula underneath I could turn the membrane up, and fold it back upon itself. I once saw it developing itself in this way, till, pushing out from the edge of the tonsil on whose surface it originated, and stretching across to the other side, it formed a thick dense valve, which closed firmly at every inspiration, and threatened to suffocate the patient. Seeing the dangerous condition of matters, I seized this valve-like piece of membrane with my finger and thumb, and forcibly removed it. To the touch it felt precisely like a bit of wet chamois-leather; it was so tough that I could not tear it, and was about the size and thickness of a shilling.

However small and circumscribed the patch of membrane at first may be, it rapidly spreads, so that on my second visit I have found it nearly enveloping the whole of the tonsil it had at first attacked, and giving to the part an appearance as if melted lard had been run over the surface, and allowed to consolidate in cooling. In the cases which got better I found every day amongst the sputa portions of membrane which the patient had coughed up; and in the case of a boy who died, there was forcibly expelled from the

throat a tube of membrane about the same size and of the same form as the finger of a glove. In my worst cases the exudation became gradually disorganized and of a dirty brown colour, and could be scraped from the back of the throat with a spoon; this putridity was the cause of a most intolerable stench, which the free use of disinfectants failed to keep down.

Is Diphtheria contagious?—From what I have seen of diphtheria I am quite satisfied that it is highly contagious. I am aware that this idea is discountenanced by some, but the following illustration, I think, is conclusive:—

In the beginning of June 1863, the disease broke out in the family of a ploughman, residing in one of a range of cottages, where, in the next house but one, a child had died of diphtheria *three months before*. Five of the family were attacked, and two of them died, the second death having occurred on the 2d day of July. On the 4th, the mother of the family, who had been faithfully nursing her sick children, was seized, but soon recovered. Then there was a lull, and I began to hope that the disease had passed away. But on the 26th of August, *more than seven weeks after*, a boy was attacked, and in another day or two a young woman of nineteen, and both died. This young woman had been away from home at service, was never near the house during the illness of the first five cases, and had just returned to assist in harvest work. Here we have eight cases in one family, four of them falling victims to this disease, and will any one deny that the disease was propagated by contagion?

Duration of the Disease.—I hear it frequently remarked that diphtheria does not prove so rapidly fatal now as it did some years ago, and I believe that there is some truth in the saying. Whether it is that the affection has undergone some modification tending more to assume a chronic form now than formerly, or that some advance has been made in the treatment, it is certain that patients are not generally so suddenly cut down by it as they were wont to be. Of the thirteen fatal cases which have occurred in my practice, one or two died in two days, but most of the others survived till the sixth, seventh, ninth, or even the eleventh day. Before death the countenance assumed a strange startled appearance; the lips and hands became blue; there were sudden startings, apparently involuntary, sometimes so violent as to jerk the patient with great force fairly out of bed; the breathing was hurried and laboured, every inspiration being attended by a harsh rushing sound; there was an intense burning pain in the throat and stomach; the voice was reduced to a dry husky whisper; and yet, amidst all this suffering, the mind remained unclouded till the close.

General Treatment.—My efforts from the very first were mainly directed to keeping up the general tone of the system, as nearly as possible, to the standard of health. It is now generally admitted,

both in this country and abroad, that one important means to the attainment of this very desirable end, is the administration of iron, in some form or another. I have used it in the form of the tincture of the muriate, the syrup of the iodide, and in combination with the chlorate of potash. The tincture of the muriate is, in my opinion, the most serviceable; it was well borne by the patients, was given very freely, and for lengthened periods. Its exhibition is doubly beneficial; for while it tends to maintain the strength of the patient, it at the same time seems to ward off the occurrence of the secondary effects of diphtheria, viz., albuminuria, paralysis, etc.

When, as was usually the case, there was derangement of the digestive functions, I began the treatment by administering a few grains of calomel, followed by a mild aperient draught. There was often tenderness of the bowels, and for this and other reasons, I was always careful to prescribe the mildest possible purgatives.

Diet.—I gave the patients as much nourishment as they could take, and I found that, in most cases while solids were refused, strong soups, soft-boiled eggs, and milk, were greedily consumed. Strong coffee was liked by some, and appeared to have a soothing influence.

The use of Ice.—I tried the effects of ice in three cases, and found it a most valuable palliative. It was given at intervals in small pieces, and I shall never forget the eagerness with which it was consumed, and the intense gratification it seemed to give to the poor sufferers. It cools the mouth and throat, and may possibly give relief by allaying the inflammation and swelling of the throat. Warm poultices alleviated the pain of swollen glands, while sponging of the face, chest, and arms, with vinegar and water, revived and refreshed the patient.

Stimulants.—What has been called the law of tolerance comes prominently into play, in diphtheria, so that the amount of alcohol that may be consumed, even by very young patients, is very great. Brandy, or good whisky, administered frequently in small doses is of the greatest benefit; and in no case did I ever see any bad result from the free administration of stimulants.

Local Treatment.—The nitrate of silver in stick and solution, and the strong hydrochloric acid, were the only caustics which I applied to the throat, but the latter is decidedly the best. I used it in most of my cases, and from what I observed, I have no hesitation in saying that is the best local agent with which we are yet acquainted. In applying it to the throat, I found the following method more suitable and safe than that recommended by the French physicians.

Mode of Applying the strong Hydrochloric Acid to the Throat.—The tongue is depressed by a broad spatula, and a medium-sized camel's-hair pencil with a long handle, having been soaked in the acid and afterwards squeezed till it merely appears moist, is applied to the diphtheritic patches on the throat. The superiority of the

brush, as compared with a bit of sponge attached to a piece of whalebone is very great. The sponge I found presented too large a surface, to enable me to touch the affected parts with precision; and it was dangerous too, for, from the action of the acid, it was apt to become detached from the whalebone. The hair pencil, on the other hand, seemed to suffer little or nothing from its immersion in the acid, and the only precaution I took was to wash it well each time it was used, in warm water. And in using it, I had no difficulty in applying the acid to the precise point.

I found that the application of the acid was attended by almost no pain, or any other disagreeable symptom. Indeed, my patients freely allowed me to use it, and after every application expressed themselves as feeling relieved. The effect of this treatment was to shrivel up and detach the false membrane, which almost always came up in small pieces after each application of the caustic.

Gargles.—I have not much faith in the use of gargles,—at all events, in the early stages of the disease; although I have been informed by a medical friend that he has seen much benefit following the early employment of very warm water as a gargle. Their proper place, I think, is in convalescence, to brace up the relaxed membrane of the throat. For this purpose I found nothing better than alum water. Unfortunately, in many cases the patients are too young to admit of the use of gargles, and in them we may have recourse to the insufflation of powdered alum. The powder is put into a tube (I used one made of gutta-percha) and blown with some force on the back part of the throat.

ARTICLE V.—*Case of Aneurism of the Thoracic Aorta: Absorption of Portion of Clavicle, First and Second Ribs, and Upper Bone of Sternum.* By ROBERT DYCE, M.D., Aberdeen.

JOHN CHISHOLM, aged 54, tailor, a small-made man, a native of Aberdeen, a hard drinker, was admitted into St Nicholas ward, Royal Infirmary, on the 6th of January 1862.

On admission, he seemed in a state of collapse. His countenance was pinched and livid, his breathing was short and oppressed, he answered questions with great difficulty, his pulse was small and weak, and his body cold. He was immediately given a stimulant of brandy, a large blister was applied over his chest, and when reaction had come on, a laxative was ordered, and an expectorant mixture. In a few hours there was a marked improvement, the sunk expression had given place to a smiling, grateful countenance, the distress in breathing had gone, and he was able to give the following history of his complaints. That he has enjoyed good health until about ten days ago, when he felt pain in the right side of his chest, confined to a small spot, upon and below the clavicle

of that side, near its middle; that the pain was not acute, but gnawing and constant; that for some time before this he had had uneasiness in the part, but scarcely amounting to pain; that about the same time he occasionally felt some difficulty in breathing, but no cough or ailment which interfered with his employment as a tailor.

On admission, he complains of pain in the right clavicle; the pain extends up the side of his neck behind his ear; has now some cough, which is loose, and accompanied with a muco-purulent expectoration; has no pain on coughing, or on deep inspiration, and can lie in any position. Since the application of the blister, has no impediment in his breathing. Pulse regular, calm; appetite generally good. On examination, the chest sounds well, except below the right clavicle from its middle inwards, and at the upper part of the sternum; over these parts there is a manifest dulness on percussion; breath-sounds are nearly throughout normal, sometimes accompanied with a slight wheeze, especially upon the left side. The heart's impulse is natural, and the dulness over it is of normal extent. No bruit is heard with either sound, either over its apex or base, but under the right clavicle the second sound is accompanied by a bruit, which is also heard over the outer part of the supra-clavicular region. Pulsation is here felt, and detected by the eye, and a purring tremor is at times perceptible to the touch. The arteries of the whole of the right arm are readily traced by their strong pulsation along the extremity. There is also pulsation of the jugular on the same side. On the left side no such pulsation can be seen either in the vessels of the arm or jugular. No difference in the pulse at the wrists. No tumour can be detected in the axilla or in the neck. The superficial veins on the upper part of the right side of the chest are very distinct. Can ascribe no cause for his complaints. To continue the expectorant mixture. Nourishing diet.

22d January.—Cough and expectoration now only troublesome in the morning. Has no pain in the clavicular region unless when he coughs. Pulsation is more palpably felt at the sternal end of the clavicle, between that and the first rib; the bruit is louder, and with frequent intermissions. Eats and sleeps well, and has required no opening medicine.

6th March.—Since the previous report, has twice had a return of bronchitic symptoms, but for the last ten days has been tolerably well. Has been free from all pain, and has relished his food. The physical signs remain as marked as before. Has had a second blister, which has been rather troublesome to heal. Is anxious to go home, and is therefore discharged.

Was readmitted five weeks afterwards (on the 14th April) with the same train of symptoms as when he last entered the hospital. He stated that, with the exception of occasionally feeling the old pain about the collar-bone and shoulder, and having a slight cough, he had been tolerably well, and able to attend to his work, until

the day of his admission, when, on his way to his work, he was suddenly seized with a violent attack of dyspnoea, with complete prostration. In this state he was brought into the hospital. Similar means were resorted to, namely, brandy, and soon after a laxative, and a blister to his chest, and with a like good effect; so that now (16th April) he is free from any difficulty in breathing, and looks cheerful and well. The auscultatory signs on the right side are much the same as when last in the hospital. To appearance, the middle of the clavicle looks fuller and more prominent, and pressure above and behind the clavicle detects a resisting body like a tumour. But, on the left, dry bronchitic rales, and occasional crepitus, are heard over all the lung. Has frequent, short cough, with brownish, rusty-coloured expectoration. Pulse 82. The brandy and expectorant mixture to be continued. Blister to be reapplied.

27th April.—Has had some severe attacks of pain in the clavicular region and neck, extending up the back of his head and ear. The bulging above the clavicle is more manifest; cough and expectoration not troublesome.—℞ Linim. anodyn, ℥iss.; Tinct. opii, ℥ss.—M. p. linim. Continue mixture, and brandy.

21st May.—Has found relief from the embrocation. The pain has never been so severe. Cough continues at times. Cont.

29th May.—Has continued better. Eats and sleeps well. Cough not troublesome.

17th June.—Since last report, has had a sharp attack of diarrhoea, which was relieved by chalk mixture and opium, and bowels are now steady. Tumour above the clavicle has steadily increased in size, and is very hard, but not painful. Pains in shoulder and neck are not complained of. Cough, though not more frequent, has a laryngeal ringing sound, with scanty watery expectoration. Cont. medicam.

27th June.—During last night has had severe pain in shoulder and neck, with frequent sense of suffocation, preventing sleep. Cough soft and loose, but without much expectoration. Appetite less good; is urgent for the opiate friction. Cont. alia.

1st July.—Sense of choking has become more frequent and distressing. The tumour is increasing, and gnawing pain in neck and shoulder is very urgent. Hot laudanum, and poultice with laudanum, afford him temporary relief.

4th July.—Tumour has increased, and now measures, from before outwards, about $2\frac{1}{2}$ inches, and from below upwards, $1\frac{3}{4}$ inch; in this latter direction the clavicle seems to be absorbed, as the swelling is continuous over and some way beyond it; near scapular end it is lost at the edge of the tumour. Cont.

2d August.—Tumour increasing in neck,—measures laterally fully 5 inches, and from above downwards, 3 inches,—surface has become irregular and nodulated. His general health has not, however, suffered. There has been less pain, less cough, and only occasionally distressed with dyspnoea and sense of suffocation. For

the dyspnœa an anodyne with sulphuric ether has usually been given him. No difficulty in deglutition; appetite continues tolerable; bowels regular.

9th August.—Irregularities of surface of tumour greater,—one nodule on the upper part very thin and prominent. The surface of a considerable part of the tumour has a blush of redness, and has become painful to the touch.

17th August.—Tumour increased; more elevated, and more diffuse; colour varies in intensity and in extent. Attacks of dyspnœa more frequent. Pulse, which at one time was only occasionally irregular, is now constantly so.

8th Sept.—Increase of tumour continues in all directions; from shoulder inwards measures upwards of 6 inches. One nodule is very thin, covered only by integument, and conveys the sensation of a sharp defined edge on pressure. From the nearly incessant gnawing pain in the neck, shoulder, and whole extremity, and the continued attacks of dyspnœa, he is urgent for laudanum. Sometimes 30 drops are given twice during the night, and as often in the day. No difference in the pupils.

17th Sept.—Within these last few days there has been a decided change for the worse,—the tumour now measures 8 inches across the chest, and more than 5 from above downwards. The colour is deep purple, the nodules not so prominent. General health is giving way. Though out of bed occasionally, he is manifestly weaker. Countenance is anxious, and breathing short and oppressed; takes little food. Has expressed a wish to go home.

The day following that on which he left the hospital (18th Sept.), a great change took place. The tumour had rapidly enlarged, having extended downwards into the axilla and side of chest, and upwards and backwards upon the shoulder, and was of a uniformly deep purple colour. His breathing was painfully oppressed; countenance dusky, and complaining of excruciating pain along the right upper arm, which he firmly grasped, as affording him partial relief. The oppression continued to increase, and he died on the afternoon of the same day.

Secio Cadaveris, 43 hours after death.—The tumour, the integument over which was flaccid and corrugated, was seen to extend from the right acromion process to rather beyond the centre of the sternum, and in this diameter it measured 9 inches; from its upper part in the neck downwards, it measured $6\frac{1}{2}$ inches; it was of a purple colour; the cuticle over it was very thin, and easily peeled off; and it felt as if the contents were fluid. An incision was made from the acromion process to the centre of the sternum, over the tumour, and another at nearly right angles, from the thyroid cartilage downwards to near the umbilicus. A considerable deposit of fat covered the lower part of the tumour. On dissecting up the flap over the tumour, large masses of coagulated blood and decolorized fibrine (weighing, as nearly as could be guessed, between one

and two pounds) were found, enclosed by no distinct sac, extending high up into the neck, and burrowing between the ribs and the muscles over the whole side, as far down as to be on a level with the ensiform cartilage, and filling up the interstices between the great vessels, the trachea, and the surrounding muscular fibres, and adhering to the pleura and the adjacent parts. In the midst of the masses of fibrin and coagula were found the outer half of the clavicle and first rib, with the brachial plexus. The sternal half of the clavicle, first rib, and the right half of the first bone of the sternum, were absorbed. The upper surface of the second rib was denuded of periosteum, and rough. The aorta was much dilated from its commencement to the beginning of the descending portion of the arch. At the junction of the ascending and transverse portions there was a constriction, and one or two secondary dilatations or pouches. Large patches of atheroma, almost approaching to bone, were found all over it, and the vessel was thicker than usual. At the upper part of the transverse portion of the arch, just where the innominate artery is given off, there was an opening capable of admitting five fingers, surrounded by a firm atheromatous ring. The pleura on the right side was adherent to the ribs; on the left, less so. The right cavity contained a good deal of serous fluid. The upper lobe of the right lung was pressed down, and both lungs were emphysematous. The heart was slightly enlarged, and had an abnormal quantity of fat on its exterior. No other organs examined.

Remarks.—This was a case originating in true aneurism of the aorta. The vessel had then given way at the dilated portion, which communicated with the aorta by the above-mentioned large opening, forming a diffuse false aneurism. The patient seems to have died from asphyxia, produced by the continued pressure on the trachea, aided, no doubt, by the exhaustion consequent on the great drain of blood from the rest of the body. Had he lived a few days longer, in all probability, judging from the state of the integuments over the tumour, which were very thin and livid, the aneurism would have burst externally.

There was scarcely from the first any doubt as to the diagnosis in this case; but its cause is difficult to trace. The most prominent symptoms were readily accounted for. The bronchial symptoms seemed due to the aneurismal tumour acting mechanically, by pressure on the bronchi, thus causing interruption to the free return of blood, leading to congestion. The hoarse laryngeal cough was induced by irritation and pressure upon the laryngeal nerves. The pain in the arm was also clearly proved on dissection to have been owing to the pressure upon the brachial plexus of nerves; while the pain in the neck extending up behind the ear was perhaps due to the pressure of the tumour on the superficial branches of the brachial plexus of nerves, or to the extravasated blood extending up to the plexus.

ARTICLE VI.—*Case of Secondary Hæmorrhage in which the Femoral, External Iliac, and afterwards the Common Iliac Arteries were tied.* By W. B. M'KINLAY, M.D., F.R.C.S.E., Surgeon to the Paisley Infirmary.

(Read before the Medico-Chirurgical Society, 6th January 1864.)

GEORGE TAYLOR, aged 30, miner, was admitted into the Paisley Infirmary on the 12th of September 1863.

On admission, he was found to have sustained a compound fracture of the tibia of the right leg about the middle. There was also extensive bruising of the soft parts of the leg.

While pursuing his avocation as a miner in an ironstone pit, a large piece of stone, weighing several hundredweights, fell out of the excavation he was making, upon his leg. The stone remained upon it for a considerable time, the efforts of seven of his fellow-workmen being insufficient for its removal; and it was only after breaking the stone into fragments that he could be extricated.

After his admission, considering that he was an apparently healthy man, it was thought proper, on consultation with my colleagues Drs M'Keehnie, Richmond, and Taylor, to give the leg a chance before proceeding to amputation. The limb was accordingly put up in splints with an interrupted bandage, and a system of irrigation was pursued, the anterior aspect of the leg being slightly covered with lint. A week after admission, diffuse cellulitis, together with disorganization of the effused blood, set in, with a profuse discharge of foul thin pus.

Patient complained of hot burning pain in the limb, and this was accompanied by profuse sweating, especially at night. Matters continued much in the same state for another week. Free openings were made for the escape of pus, which drained away in large quantities. At this time no crepitus could be distinctly felt, and this, together with a sense of firmness when the leg was raised, were causes which induced a second consultation to advise further delay; his strength being in the meantime supported with generous diet and wine.

Towards the close of the third week the symptoms of irritative fever rather increased in severity, and another opening was made for the escape of pus, which was still of a fetid character.

Crepitus being now slightly felt, a third consultation was called; and on Monday, 5th October, exactly three weeks and two days subsequent to the receipt of the injury, amputation was performed at the lower third of the thigh, the tissues around the knee not being considered sufficiently sound. There was nothing to remark during the operation, which was performed by two flaps, the anterior one the longer. Very little blood was lost, and the arteries were easily secured by ligatures.

Next morning patient was much better, and the pulse was calmer than it had been for a fortnight previously.

7th October, stump was dressed. The margin of the posterior flap showed a slight tendency to slough. With this exception the wound seemed healthy.

9th.—Healing process going on favourably, and union seemed to be advancing. Shortly after the visit this morning, Dr Taylor, who was acting for me in my absence at the Social Science meeting in Edinburgh, was suddenly called, the stump having been found to be bleeding profusely. Pressure was immediately applied to the femoral artery, when the bleeding ceased. Patient was put under chloroform, and the flaps separated. In the process of separation it was observed that very considerable union had taken place, and that an abundance of healthy granulations had formed. When the vessel was completely relieved of the pressure the hæmorrhage had entirely ceased, and it did not commence again, so that the bleeding point could not be ascertained. The flaps, after being exposed for a short time, were carefully placed in opposition, and cold-water dressing was applied to the stump.

In the evening patient was weak from loss of blood, about one pound having been lost in the morning; but he was cheerful and free from shock. Absolute quiet was enjoined, and he began to improve until next evening, when I was sent for, the hæmorrhage having returned. It was immediately restrained by pressure, and the artery was subsequently secured by means of an acupressure needle. Very slight oozing continued for a few hours after the artery had been secured, but not much more than what soiled the cloth around.

Next day, *10th October*, he complained of slight uneasiness in the stump, but progressed favourably; he was constantly watched and kept quiet. All dressing was removed, with the exception of a piece of wet lint; and he went on very favourably. On the *17th*, that is, seven days after the introduction of the needle, it was removed; the stump was granulating very well.

On the third day after the removal of the needle another bleeding took place in a much larger stream than before. The acupressure needle was buried deep in the flap, so as to secure the main trunk, when the hæmorrhage entirely ceased.

On the second night after this, patient felt as if something had given way in the stump, when it was found to be bathed in blood. Compression upon the femoral was immediately had recourse to, and an acupressure needle was introduced higher up, with the effect of at once controlling the bleeding. Patient was in a very weak condition, but still he was cheerful.

20th Oct.—As the patient was already excessively reduced by the severe and repeated hæmorrhage, and as the means for arresting the bleeding at the stump had always failed, it was resolved, on consultation, that the femoral artery ought to be tied. The patient

having been put under chloroform, the artery was tied in the usual manner at the apex of Scarpa's triangle. No blood was lost in the operation, and there was no subsequent oozing. A drachm of solution of morphia was given at bedtime.

21st Oct.—Patient passed a comfortable night; pulse weak, but calm and regular. He feels a good deal better.

25th Oct.—He is in good spirits. Appetite excessive (this has been the case to a greater or less extent all along). Pulse improving in strength. Wound was dressed, and contained a quantity of good laudable pus.

He continued to progress very favourably, always taking his food well, and keeping in good spirits. His cheeks gradually lost their blanched look, and the wound over the femoral as well as the stump looked very healthy; the former nearly healed.

On the tenth day after the application of the ligature to the femoral, the patient, feeling something warm trickling down his leg, looked, and found some blood oozing from the wound over the femoral artery. A person who had been kept constantly watching him immediately compressed the femoral above the wound, and sent down stairs for the house surgeon (Mr J. W. Taylor), who was in immediate attendance, and found the blood welling up from the wound in very large quantity. The wound was immediately plugged with a compress dipped in a solution of perchloride of iron and glycerine. This, along with compression of the femoral artery above, restrained the hæmorrhage for a time. Having been sent for, I at once applied Skey's tourniquet to the limb above the wound, so as to compress the femoral artery without preventing the return of the blood from the lower part of the stump. Patient was constantly watched, and the application of the tourniquet was successful in restraining the bleeding.

Patient complained bitterly of the pain caused by the tourniquet during the night, and had to be kept under the influence of morphia. Next day the pain had diminished considerably, and he did not complain of it much during the rest of the time. It was resolved, on consultation, to try if the tourniquet would arrest the hæmorrhage. On the third night, however, hæmorrhage set in once more, but was controlled by a readjustment of the tourniquet. It now became evident that pressure would not succeed, and it was resolved to apply a ligature upon the external iliac artery, which was done next morning, in the ordinary way—that is, an incision of about four or five inches was made about three-quarters of an inch above Poupart's ligament, in the line of the fibres of the external oblique, and the subjacent tissues were carefully divided until the peritoneum was reached; this was carefully pushed back and the artery reached. The ligature having been applied, the wound was drawn together by means of silver sutures, and compresses on each side were applied. Little more than a teaspoonful of blood was lost. Not a single bad symptom followed. The strictest quiet was observed.

Small doses of morphia were administered to allay an irritating cough which came on, and which proved very troublesome on account of the wound. In a few days his appetite returned, and the assurance of present safety promoted a cheerful tone of mind. Matters went on steadily improving until the twelfth day about four in the afternoon, when bleeding from the external iliac vessel suddenly took place without any reason. The wound was plugged, a compress applied, and the hæmorrhage controlled. There was no further bleeding till the evening, when, about 8 o'clock, blood was found welling up in large quantity by the sides of the plug. I was sent for, when I immediately applied Lister's abdominal tourniquet, as no pressure on the wound would suppress the flow of blood. The application of the tourniquet succeeded for a short time, the patient complaining of horrible agony all the while, and being very restless. After an involuntary jerk of the body caused by pain, hæmorrhage commenced again, when I immediately cleared out the wound, and having slightly enlarged it, I plunged my finger to the bottom, and by that means was so far able to control the bleeding. I then directed a pair of artery forceps along my finger, and succeeded in seizing the bleeding point; a ligature was passed down over the forceps, and the artery which had been completely divided was tied. This ligature was in the highest degree unsatisfactory, seeing, that after the first knot was tied, and before the second could be secured, the forceps came away, with a small portion of tissue within their grasp. No bleeding, however, took place, although the pressure of the tourniquet was taken off.

The patient was very much sunk by the repeated hæmorrhages; his lips were bloodless, his eyes sunk, and he could scarcely speak above a whisper; it seemed also inevitable, that should another hæmorrhage take place, death must immediately ensue.

The state in which he was having been duly explained to his friends, they at once expressed their willingness that any means which seemed likely to save him should be had recourse to.

A consultation was called, when it was resolved that a ligature should be applied to the common iliac artery. Accordingly, at 5 o'clock in the afternoon of next day, in presence of my colleagues Drs Richmond and Taylor, and also of Dr Leitch, surgeon of the 41st Regiment, and of Messrs Donald and Colligan of Paisley, chloroform having been administered, I proceeded to operate. The wound previously made was enlarged to the extent of nine inches, and the peritoneum was slowly and carefully pushed back until the division of the common iliac was reached, when, the longest aneurism needle I had, having been armed, it was gradually insinuated under the artery from within outwards, the artery was distinctly felt, and also the bifurcation or division below where the needle had been passed. The wound was so deep that the end of the handle of the needle was barely above the wound: the ligature having been seized and pulled through by a hook, was tied by means of direc-

tors with a notch on the end, and the wound having been closed, the patient was removed to bed. Not above a tablespoonful of blood was lost.

Cough, as after the last operation, proved very troublesome, and was kept in abeyance by means of morphia. No other symptom worth mentioning manifested itself. The wound was dressed next day, when it was found to contain a quantity of healthy pus. Notwithstanding the previous failures, patient expressed himself perfectly sure of the success of this operation. Next day wound was healthy, pulse improving.

Fifth day.—Wound dressed; looking extremely well; granulations abundant and healthy. To have lime-juice $\mathfrak{z}$ i. thrice daily. Appetite good.

From this time he continued steadily to improve, not a single bad symptom having followed. His appetite was voracious, and he was constantly asking for an addition to his diet. His cheeks rapidly lost their anæmic paleness, and he took on flesh rapidly. The lime-juice was discontinued upon the twenty-eighth day after ligature.

On the thirty-eighth day the ligature was removed, and the wound, nearly healed before, progressed with astonishing rapidity; in every dressing there was a very distinct progress. On the 31st December he was dismissed, the wound being entirely filled up.

ARTICLE VII.—*Puerperal Pyæmia.* By GEORGE HILL, M.D. Edin.,
L.R.C.S.E., Hooton, Chester.

THERE are few subjects connected with the practice of medicine more deserving of the consideration of the physician than that formidable group of diseases comprehended in the term "puerperal fever." There are few more fraught with interest and importance, whether we consider the class of patients who are its victims, or the fatal character of the disease: some forms of which have hitherto baffled all the resources of the healing art. Former experience testifies that if we are to diminish the mortality from puerperal fever, it will not be by the means of cure which, in the present state of our knowledge, we possess. Even the means of prevention must be but imperfectly understood until we arrive at a more accurate knowledge of the nature of the disease, and of the circumstances under which it takes its rise. The earliest writers on medical science described the fever of childbed, and notwithstanding that subsequent writers in all ages have treated of the various forms of puerperal fever, yet all attempts to reduce them to a correct nosology have been unsuccessful. The natural result of this confusion is that, in too many instances, we are compelled to direct our remedies mainly to the leading symptoms as they appear, without being

guided in our treatment by the probability of regularly recurring phenomena, as in other forms of fever which are better understood. For we cannot doubt that under this one term are comprised several distinct diseases, differing from each other as widely as typhus from typhoid; differing in causation, in duration, in contagious properties, as well as in the treatment they require. The difficulties with which the subject is surrounded are great; for the difficulties with which we have to contend in the study of any morbid change in the economy are increased by the condition of the patient in whom puerperal fever occurs. The irritability of the system which is present during the whole period of pregnancy may be said to be at its climax during, and for some time after, parturition; and to this irritability are to be ascribed many of the anomalous symptoms by which the regular course of disease is rendered obscure,—symptoms which may fairly be attributed to disorder of the reflex function. Still, however arduous the task may be, it should be our aim to discriminate between the various forms of this complex group of diseases, to assign to each its pathognomonic symptoms, and to trace the origin of each; for the attainment of such knowledge will alone guide us to proper means for prevention, and, failing that, to a rational system of treatment.

The subject of the present observations is in many points analogous to the formidable affection which frequently occurs after surgical operations, and which has been described under the name of “pyæmia.”¹ In both a local disease precedes the constitutional; in both a deleterious product is absorbed into the system, and is followed by contamination of the blood and vitiation of the fluids generally. Moreover, the separation of the placenta from the uterus may be considered analogous to amputation, for in both the open mouths of large veins are exposed. But while a certain analogy exists, the phenomena which characterize the progress of the disease are dissimilar in the two classes of patients; for, as we might expect, the parturient woman is liable to complications peculiar to the puerperal state. One important point in which the two affections differ is the frequency of metastatic abscesses in surgical pyæmia, while they are seldom met with in pyæmia as it occurs after parturition.² The usual course of the disease is somewhat as follows:—

For some days after delivery the patient may progress favourably, presenting no symptom indicative of deviation from natural convalescence. On a certain day, however, generally between the third and eighth, a violent rigor takes place, of variable duration,

¹ So long as the term “pyæmia” does not convey erroneous impressions regarding the nature of the disease, it is preferable to “septicæmia” or “ichorrhæmia,” terms which are founded on theories as yet unsubstantiated. The introduction of such nomenclature tends to obscurity and confusion rather than elucidation and order.

² Prof. Buhl: *Med. Times and Gazette*, Feb. 1862.

followed by great depression and languor. A period of repose follows this premonitory attack, and the patient is again pretty well; but within twenty-four hours there is a repetition of these untoward symptoms. Rigors recur during the whole progress of the disease, sometimes at regular intervals, frequently continuing for two or three hours at a time; and even after they cease a general trembling sometimes continues throughout the interval. The face assumes an earthy colour, the countenance wears a pinched expression, the eye loses its lustre, and the whole physiognomy is indicative of anxiety and dread of impending danger. During the rigors the patient assumes a peculiar appearance; the face becomes livid, and the mouth contracted. Sometimes the skin is rather of an icteric colour, probably from the non-abstraction of the bile elements from the blood. It is generally very dry, no perspiration succeeding the rigor and subsequent reaction, although there is great heat of surface. The tongue is parched, the centre covered with a thick white fur, and the patient complains of great thirst. The symptoms of gastric and intestinal irritation are present—nausea, retching, and flatulence. The breath exhales a peculiar sickly odour. The bowels are generally relaxed; the evacuations dark and very fetid, sometimes frothy, and as it were fermented, and of an odour resembling putrid fish. After each evacuation the patient is much relieved. The urine is often voided in large quantity, and frequently is of the normal colour. The state of the lochia is variable, generally fetid, and in most cases at least partially suppressed. The milk is generally suppressed, and the mammae become flaccid. The pulse is small and rapid, generally between 130 and 150. Respiration is performed with difficulty. In the subjoined case, the number of inspirations rose at one time to between 40 and 50 in the minute; and towards the close of the disease respiration was attended with that peculiar blowing sound which Marshall Hall has pointed out, and which always betokens great danger. The patient often sighs heavily. The abdomen is generally tense and tumid, but pain and tenderness on pressure are by no means constant symptoms. Indeed, there is frequently no complaint of either, even over the region of the uterus, during the whole course of the disease. Erratic pains, however, are frequent, especially in the region of the liver and spleen. There is constant desire to have the hands exposed and the neck free, and the patient generally prefers a supine posture. When the disease has continued for some time, symptoms generally arise which give evidence that some of the viscera are the seat of disease. The lungs are generally first attacked, and a troublesome cough aggravates the patient's sufferings. Towards the termination of the disease the patient is in a state of stupor, and although she may be roused, there is no complaint of pain, and she quickly lapses into a state of drowsiness again. The pulse becomes tremulous and very rapid, the breathing laborious, the skin clammy, the extremi-

ties grow livid and cold, and the patient sinks in a state of exhaustion.

These are the leading symptoms of puerperal pyæmia. The constantly recurring rigors, and the earthy colour of the face, are pathognomonic. When these symptoms occur in a puerperal woman, we have strong grounds for suspecting that putrid matter has been absorbed from the womb.

I extract from my notebook the following brief history of the case above alluded to, which, though perhaps exceptional in duration, is illustrative of the progress of the disease. I regret that an autopsy was not permitted.

Mrs B., æt. 34, in the seventh month of her seventh pregnancy, had, in the beginning of January, repeated discharges of blood from the uterus, which continued in variable quantity for eight or ten days. On the 24th there was a recurrence of the hæmorrhage, which, on examination, was found to be due to placenta prævia. On the 29th it became excessive, but the os uteri was not sufficiently dilated to admit of interference. Palliative measures were used, and on the 31st, when the os uteri was soft and dilatable, I administered chloroform, while my partner, Mr Lingard, introduced his hand, turned, and extracted the child. The uterus contracted well, and the placenta followed. There was little loss of blood during the operation. The child was dead. Stimulants were administered occasionally. The patient progressed favourably, without exhibiting any untoward symptom, till the eighth day, 7th February, when she was seized with a violent fit of shivering, which continued for nearly half an hour. On the 9th there was another paroxysm at the same hour. Quinine was administered, but with no beneficial effect. Similar paroxysms recurred daily, with a certain degree of regularity, but the temperature of the skin was not morbidly diminished during the rigor. The face assumed an earthy colour, and the general aspect of the patient indicated great anxiety. The bowels were freely moved; the motions dark and very offensive. No pain or tenderness of the abdomen.

14th February.—Pulse small and rapid; respiration rather laboured, but lungs quite free. Lochia scanty; urine normal; no secretion of milk. Had a violent fit of shivering this forenoon, leaving patient much exhausted. These symptoms continued without much change, resisting all remedies, till the 19th, when the patient complained of nausea, retching, and flatulence. The fits of shivering became more irregular, both in the frequency of their recurrence and in their duration, continuing sometimes for two or three hours. The stomach was very irritable, rejecting all ingesta immediately. The integuments presented a decidedly icteric tint. The irritability of the stomach was relieved by small doses of hydrocyanic acid, but the erratic shiverings continued.

On 27th February the patient was much worse. Sleep disturbed. Great pain and tenderness over the region of the liver;

nausea and retching; tongue dry, and furred in the centre. Bowels rather confined; motions very offensive. Pulse very rapid, about 140. Great dyspnoea. Ordered a blister to be applied over the seat of pain, followed by inunction of mercurial ointment, and small doses of calomel and opium.

28th February.—Tenderness over the liver quite abated. Pulse still rapid, but soft. Bowels confined; tongue parched; urgent thirst.

3d March.—Shivering continues, recurring twice daily, sometimes when patient is asleep. Motions more natural. Integuments still present a very earthy appearance, and patient still complains of great uneasiness and wretchedness. Breath very offensive.

Finding no improvement in the condition of the patient, I requested Mr Long of Liverpool to see her. Accordingly, on 12th March, he visited her along with me. We were quite agreed as to the nature of the case. He recommended the administration of chloric ether and carbonate of ammonia. For three days there was no return of the shivering, and the other symptoms improved. But troublesome cough came on. Pyæmic pneumonia supervened, first in the lower lobe of the left lung, and progressed upwards; then the lower lobe of the right lung was attacked. On the 15th a very violent rigor seized the patient, but the pulse became more full and regular. Breathing became more laborious; the patient was almost constantly in a state of stupor, although she could be roused, and talked sensibly to her attendants. On the 18th she sank.

It will be observed that the above description of puerperal pyæmia corresponds in many respects with the "puerperal remittent fever" described by Dr Butters. It is in fact a remittent fever. A poisonous product is absorbed into the system, or, at any rate gains admission to the circulation, and the constitutional disturbance, which, the natural efforts at riddance of the poison involve, we term "fever." But the question at once suggests itself, What is the nature of the deleterious agent, and under what circumstances are its injurious effects produced? These are points which have given rise to much discussion, and merit our attention.

The formation of the so-called secondary abscesses in the lungs and other viscera after a severe surgical operation or other injury, naturally gave rise to the supposition that purulent matter was conveyed direct from the suppurating wound to these organs,—a theory which is still supported by several eminent pathologists. This explanation of the origin of these abscesses, and of systemic infection in general, seemed to derive support from the condition of the blood of the pyæmic patient, which, when examined microscopically, is found to be greatly deficient in red corpuscles, while there is a great excess of what appear to be the normal white corpuscles of the blood, but which are hard to distinguish from those of pus. It is of the utmost importance that the true nature of these latter bodies should be ascertained, for on the presence or absence of the true

pus-cell in the blood are founded the various theories which have been framed regarding the pathology of pyæmia, and of the morbid conditions to which it so frequently gives rise. M. Lebert, who has made extensive researches on the subject of pyæmia, has never succeeded in detecting the pus-corpuscle in the blood. Moreover, the experiments of Mr Lee,¹ and subsequently those of Mr Millington,² go far to prove that it is very improbable that pus can circulate in the blood. Indeed, it seems highly probable that when pus gains admission to the general circulation, disintegration of its corpuscles is the speedy result. These observations are opposed to the theory of Dr Budd and others, that the disseminated abscesses are caused by the mechanical arrest of pus globules in the capillaries. The fact, also, that stagnant water produces the same symptoms as putrid pus, when injected into the circulation, as demonstrated by Magendie, is opposed to this theory; while it supports the view that the morbid alterations which take place are rather to be ascribed to chemical change. It is more probable that the cause of the disease is, not the admission of pus to the circulation, but of decomposed matter, which acts on the system in the same manner as many other animal poisons. After dissection-wounds, for example, we frequently see a train of symptoms very similar to those observed in pyæmia. Even the symptoms of glanders bear a certain resemblance to those of pyæmia. The poison may be putrid serum, or the elements of pus in a state of decomposition, or disorganized fibrine, from coagula formed in the veins; at any rate, it is septic matter developed within the organism, and the veins, or lymphatics, or both, may be the channels by which it is received into the system. Moreover, the intensity of the disease will depend on the quantity absorbed, on the constitution of the patient, and on the other circumstances of the case. If the quantity have been small, and the patient robust, the poison may be eliminated without exerting its detrimental influence on the blood; the elimination being often manifested by febricula or diarrhœa.

The *duration* of puerperal pyæmia is variable. It seldom terminates in less than three weeks. Professor Buhl of Munich states that it is "generally protracted over two, three, or more weeks."

The *prognosis* is generally unfavourable. It will depend much on the constitution of the patient, on the character of the labour, on her previous mode of life, and on the severity of the symptoms. As in all other puerperal diseases, a flabby and loose habit of body is unfavourable for recovery. In many cases there is a temporary abatement of the more severe symptoms,—an apparent improvement which may deceive the unwary physician,—so that caution is necessary in giving a decided opinion.

Can we do anything by way of *prevention*? It is, of course, after difficult and instrumental labours that puerperal pyæmia is most likely to set in; arising, not only from the constitutional irri-

¹ Monthly Journal of Medical Science, Nov. 1851.

² Ibid.

tation which they involve, but also from the tendency to local disease, to which manual or instrumental interference must of necessity give rise. Nor can we be surprised that an organ so susceptible of morbid influence as the uterus is at the time of parturition, should thus, as it were, resent the rude assistance of art. Prudence, therefore, dictates the exercise of great caution when recourse is had to these expedients, and as gentle interference as is compatible with the safe delivery of the patient. The tendency to pyæmia is likewise greater after hæmorrhage, for absorption is then unusually active. In many women, whose labours have been followed by hæmorrhage, its recurrence might be prevented by applying, during labour, an elastic abdominal bandage, similar to that used in the operation for ovarian dropsy. Moreover, it is to be feared that in the present day, stimulants and stimulating diet are too freely administered in the early stages of convalescence from labour. It is better always to be on the safe side,—to prefer a recovery that is sure, though slow, to one in which the hazard of disease is incurred. Still, it must be admitted that in very many cases puerperal pyæmia will occur, notwithstanding every effort that might be used for its prevention.

In *treatment*, we must bear in mind the pathology of this disease. A poison has entered the circulation, and, as already observed, a fever is set up as the natural means by which it is to be extruded from the economy. It is surely contrary to rational principles to oppose this effort of nature by administering depressants and such diet as will reduce the powers of the system. If we consider that, even under the most favourable circumstances, the patient has to bear up under an exhausting disease; that the blood, whose function is to convey the elements of nutrition to the tissues, is contaminated, and nutrition in consequence impaired; we will readily see the necessity of supporting the patient's strength, and administering such remedies as are calculated to favour nature's efforts at extrusion. Generous, but not too stimulating diet, carbonate of ammonia and chloric ether, antiseptics, as hydrochloric acid, are indicated. As we have seen, the red corpuscles of the blood are greatly deficient in number. Now, these are the carriers of oxygen, and the dyspnœa, so frequently present in pyæmia, may in some degree be accounted for by their deficiency. Such remedies, therefore, as will oxygenate the blood are necessary. None will be found so useful as chlorate of potass. The bowels must be carefully regulated. They are generally relaxed; but if there is any tendency to constipation, aperients must be given. Complications must be met by the remedies suitable for each. Various remedies have been recommended in pyæmia. M. Tessier strongly recommends tincture of aconite, and states that he employs it as a prophylactic in puerperal women, when there is any tendency to phlebotic complication. Roser employs quinine and morphia. Free ventilation is an essential part of the treatment.

ARTICLE VIII.—*On Dental Disease as a Cause of Obscure Forms of Constitutional Disturbance.* By J. SMITH, M.D., F.R.C.S.; Dental-Surgeon to the Royal Infirmary; the Royal Hospital for Sick Children; Acting Surgeon-Dentist at the Edinburgh Dental Dispensary; etc., etc.

SOME time ago, in a paper on the removal of stumps and decayed teeth (*Edin. Med. Journal*, May 1862), I alluded to the effects likely to be produced by the constant presence in the mouth of animal matters in a state of decomposition, arising from various conditions of dental disease.

What was then more particularly referred to, was the probability of poisonous effects from the introduction of such matters into the stomach during the act of deglutition, from their absorption by the mucous membrane of the mouth, and from their being inhaled more or less during respiration. The quantity thus introduced, it was admitted, might be small; but this was pointed out as counterbalanced by their constant presence in the mouth for a lengthened period of time, their peculiarly offensive nature, and the fact that, besides their mere absorption continuously going on, not only was every mouthful of food contaminated by their presence in the process of mastication, but every time the constantly recurring deglutition of the saliva took place, a certain portion of such offensive matters was swallowed. And the inference drawn from such considerations was, that as in other cases where the oral tissues in a state of putrefaction seemed to act as a poison,—as in the case of *cancrum oris*,—the analogous products of dental disease might lead to similar results.

In addition to these consequences, considered as produced by the assimilation of a poison, it was noticed that the existence of disease in the dental tissues acted in an unusually powerful manner as a cause of reflex irritation; and that in this way interference with the function of remote parts might not unnaturally be looked for. Some examples of all such instances were noted, and the treatment indicated in these and the other class of cases was briefly described.

About the time I wrote the paper above referred to, I communicated on these matters with a number of my medical brethren. From several of them I received information of cases bearing out the views I held respecting this subject; and all of them who have corresponded with me on the matter express their conviction that such disturbance of the general health is by no means uncommon as a result of dental disease.

It by no means follows that pain, or much local uneasiness of any kind, should be a necessary condition of such a state of the mouth as entails the consequences under consideration. Indeed, it is this very fact which leads to the local cause of the mischief being so

much overlooked. Patients themselves are unaware of its existence in many cases; so long as local uneasiness is absent, they will state that there is nothing to complain of in the mouth; they suspect no connexion between their ailments and the condition of their teeth; they are sensible of nothing being specially wrong with these organs; they admit the long continued presence of dental decay, and an unsound state of the gums and buccal cavity generally, but they never associate these with the constitutional effects produced; the real cause, obvious as it is, consequently remains unsuspected, or is forgotten; and if the patient in this way overlooks it, there is nothing wonderful in its not being detected by the medical attendant. But it must be borne in mind, that, however obscure, a powerful and a double agency is here at work in the production of disease. There is the assimilation of a poison, and there is the irritation produced, as already noticed, by the presence of decayed or dead stumps in the jaw. The latter mode of action is more generally conceded than the former; but any one who has seen much of dental or gingival diseases will not readily believe that the intensely foetid pus secreted in such cases is innocuous. Nor, while its quality is sufficiently revolting is its quantity so small as might be supposed. We must bear in mind that the pus here secreted is carried off by the saliva almost as soon as it is discharged upon the surface of the gums, and thus its appearance in very large quantity is prevented. But those who are in the habit of extracting stumps in such conditions of the mouth, know how often the blades of the forceps employed, appear after the operation as if they had been dipped in cream or some such substance; and that this foetid pus may act, and does act as a poison, will be abundantly evident if a little care be bestowed in the investigation of such cases.

Among medical men who have corresponded with me as to such cases, my friend Dr Maclaren of Lasswade was kind enough to communicate to me an interesting case which recently occurred in his practice, where mere care in keeping the mouth as clean as possible by washing away the morbid matters as they were secreted, served to improve the health of the patient under his charge. Regarding this case he thus writes me:—

“A semi-fatuous girl, living with her parents, who are in very respectable circumstances, occasionally became depressed and languid, alternately feverish, and then covered with profuse perspiration. Her subjective symptoms were necessarily obscure, but headache and abdominal pains were very often complained of. The first time I saw her I bent forward to see her tongue, but I assure you that, rather than suffer my nose to come within the emanations of that girl's mouth another time, I would willingly examine fifty typhoid excreta. She has not a sound tooth, and I cannot persuade her to have them removed. As a palliative I employed Condy's fluid; and now these attacks, which used to

lay her up for months, only recur when she neglects this, and last only a week or ten days when they do seize her."

There seems little reason to doubt this being a case of poisoning, from the condition of the mouth; and the beneficial effect following the use of Condyl's fluid is further explained by the fact of this composition not only acting as an antiseptic, but as one of the most efficient remedies we possess in the treatment of oral ulceration.

Some years ago, a patient, Miss C., applied to me for advice regarding the state of her mouth and teeth. On inspection, I found the gums in a swollen and very tender condition, bleeding easily, with small ulcerated points here and there, and containing a number of decayed teeth and stumps, from the edges of whose sockets small quantities of matter oozed occasionally. She objected to having the stumps removed, and I prescribed small doses of the chlorate of potass, and as was then suggested by some of the Continental surgeons, a wash of the same salt to be used for the mouth. A slight amelioration of the local symptoms followed these measures; but constitutional disturbance, chiefly of a gastric nature, and which had persisted for a long period, still continued. After a few visits, I saw no more of this patient until last summer, when she called on me, expressing her determination to have all the stumps and decayed teeth extracted. She told me that she had been, and then was, under the treatment of Dr James Simson, and that he concurred in the belief that such a course was advisable. She had been labouring under the same gastric derangement, complicated with apparent hepatic symptoms, ever since her last visit to me; and her appearance now resembled that of a patient suffering from some organic disease, sallow, haggard, and emaciated. I removed, under chloroform, about a dozen stumps and teeth, and appointed a day for her to see me again. About six weeks afterwards she called on me, and had an artificial substitute made for the teeth lost. After the lapse of another week or two I saw her, and by this time the general improvement in her health was at once perceptible. She was stouter, and of a healthy colour. She stated that she was in better health and spirits than she had been for years, and that her old feelings of uneasiness had almost disappeared; that she was convinced that their main cause existed in the state in which her mouth had continued for so long a time; and that all local uneasiness there was also now relieved. Here there was no time for these effects being due to the mastication of food being assisted by the artificial teeth supplied, as these had only been in use for not very many days. Indeed, in some cases I should say that mastication, so far as the mere mechanical grinding of the food goes, is not so completely or forcibly effected when artificial teeth are first worn, as when the jaws are full of stumps. Yet we find that on the removal of such stumps, notwithstanding their loss as crushing instruments, the

health, and particularly the condition of the digestive organs, is improved. This is illustrated by another case, which I may briefly describe as of a similar nature to that detailed above.

Mrs —, a patient of Dr Keiller's, a lady advanced in life, and for a long time suffering under a variety of anomalous symptoms of constitutional disturbance, and for which she had taken a number of different remedies previous to Dr K. seeing her, was brought to me by him on account of the state of her mouth. On examination, I found it presenting an appearance very similar to that described in the foregoing case, and extraction of the offending stumps and teeth was agreed upon. The patient was at that time extremely weak, and had been so for a long period. It was therefore thought more expedient to remove only the stumps in the lower jaw at this time, as greater in number and more offensive, reserving those in the upper for another occasion. Chloroform was accordingly administered, and after the exhibition of a considerable quantity, complete anæsthesia being produced, all the remaining teeth and stumps in the lower jaw were extracted. There now remained in the upper jaw two molars, the two canines, and a central incisor, all more or less diseased, and some stumps. In this way mastication was somewhat interfered with, owing to the long and projecting canines impinging with their points upon the lower gums every time the mouth was closed. Nevertheless, under these circumstances, although it so happened that the upper teeth were not extracted for some weeks afterwards, this patient increased in strength and flesh; and when the remaining teeth were to be removed, instead of the weakly nervous patient formerly to deal with, and who, I feel convinced, could not previously without chloroform have had a single tooth extracted with impunity,—the operation was now commenced by extracting both the molars without the induction of anæsthesia, and with the effect of putting the patient little if at all about. In a day or two afterwards the others were extracted; and within a fortnight or three weeks subsequently the patient called on me, expressing herself as well, and her conviction that nearly all her trouble had arisen from the condition of her mouth.

An interesting case has been communicated to me by Dr Main of Bonnyrigg, in which epilepsy seemed intimately connected with the condition of the mouth. He says,—

“The most striking case of disease arising from bad teeth which I recollect, was one of epilepsy. The patient, a young man of thirty, had been ill for some years, and had moved about from place to place, and from one so-called system of medicine to another, without finding relief. On first coming under my care, he had an attack generally every second day, and his general health was so impaired, that he was almost bedridden. On careful inquiry, I found the attack was always preceded by well-marked twitchings in the muscles of the face. The teeth I found in a very bad state, the greater number being stumps, which I recommended him to

have removed. In the weak state of the nervous system, he would not submit to this, and a course of medicine was tried. His general health improved greatly now, but the convulsions still recurred, although not so frequently. At last he had all the stumps removed, and shortly afterwards the epileptic attacks entirely left him. Though not now residing in my district, I occasionally hear from him that he still keeps well; and, as a proof that he has confidence in his health, he has lately taken to riding on horseback."

No remarks seem necessary on this case, further than to call to mind the apparent affinity, if we may so speak, between convulsive disease and the period of dentition, as bearing upon other pathological conditions of the teeth in their mature state.

Another case may be mentioned here, as interesting from the fact of the condition of a patient's mouth having in all probability been the occasion of disturbed health in other individuals,—a point which would involve many curious and important considerations.

Jessie A., nursery-maid in the family of a medical man in Edinburgh, had been long subject to attacks of erysipelatous swelling of the face, and severe headaches, and was constantly annoyed with disorders of the gums and teeth,—nearly all the teeth of the upper, and many of those of the lower jaw being far advanced in decay. Towards the end of last August, she suffered from a severe attack of pain on the right side of the upper jaw, which she attributed to the remains of a molar tooth situated there. A large swelling quickly formed in this locality, and extended over the palate, which protruded downwards into the cavity of the mouth, in form and size corresponding to half a very large walnut. Owing to the girl's residing with the family in the country at this time, and the rapid development of the swelling, no active measures were resorted to until subsequently, when her master was sent for from Edinburgh. In the meantime, however, the abscess had burst during the night, discharging a large quantity of intensely fetid pus. At the time of this occurring, she had two of the children sleeping with her, one an infant of less than a year old, the other between two and three years of age. Both of these children were at once seized with vomiting; and so protracted was this, and of so severe a character, that their mother, who slept in an adjoining room with the other children, became alarmed, and went in to inquire what was wrong. On entering the apartment, the strong, disagreeable odour made her suppose that some feculent matters were lying about; but, on going forward to see whether the children were clean, she found the smell proceeding from the nurse's mouth. In this case, nothing could be thought of to account for the sudden attack of vomiting. The other children were well, although all lived in precisely the same manner; but any one who knows the intolerable odour of these abscesses connected with the teeth can find no difficulty in ascribing such an effect to its influence,—nausea being, under such circumstances, a common complaint of the patients themselves. I saw the girl very

soon afterwards, and the tumour still remained large, hard, and discharging perhaps the most offensive sanious pus I ever met with. I removed all the stumps and decayed teeth, twelve in all, under the full influence of chloroform, and the girl in a very few days was quite well, and the swelling of the palate all but gone. About a fortnight later she called on me to say that she was now quite well,—better than she had been for years. She looked fresher and actually stouter than she had done on any occasion on which I had seen her previously, and I had seen her very frequently; and she specially remarked the freedom from headache which she had experienced since the removal of the offending teeth. I believe I am justified in supposing that in this instance we have an example of the pernicious effects immediately producible on others by the emanations from the mouth of a patient suffering from such diseases as those to which this paper refers. And, besides the sudden accession of sickness and vomiting as such more direct consequences, it might in this case be further stated that, dating from the time of this occurrence, the younger of the two children—the one who slept next the nurse, and continued to do so—became more seriously ill, the attack terminating in the formation of a large furuncular abscess on the back. Whether or not such a result might be attributed to the cause alone specified, I leave as an open question.

Koecker, a well-known authority, in his "Principles of Dental Surgery," dwells at considerable length on the constitutional effects produced by the presence in the mouth of teeth and stumps in a state of disease. He observes that there is nothing surprising if such causes of constitutional disturbance should be frequently overlooked. "Idiopathic diseases," says he, "while they only affect parts of so limited a nature as the lining membrane of a tooth, are capable of almost overwhelming the entire system by nervous irritation, so as even to produce actual madness, but are nevertheless for the most part to be detected only by dint of a most minute acquaintance with the pathology of the parts immediately concerned." He alludes to the fact of little local annoyance being experienced after the first acute stages of decay have passed off; and he points out how for years bad health may be exhausting the patient, while the cause is altogether unsuspected. The real nature of the disorder is only recognised after recovery consequent on the loss of the offending cause; and the long duration of disturbance from such sources, simple and trivial as they may appear, is probably not without examples of a fatal result. "They act," says he, "like slow poisons, slow but sure. They will destroy either in a direct or indirect way, but towards destruction they certainly tend."

Dr Rush, in his "Medical Inquiries and Observations," Part I. p. 199, relates cases of sciatica, dyspepsia, and epilepsy cured by the removal of decayed teeth. In his "Inquiries on Diseases of

the Mind," p. 35, he gives an instance of insanity apparently occasioned by diseased although painless teeth. "These facts," he adds, "should not surprise us, when we recollect how often the most distressing general diseases are brought on by very considerable inlets of morbid excitement into the system. . . . I am disposed to believe they" (the teeth when decayed) "are often the unsuspected causes of general, and particularly of nervous disease. When we add to the list of these diseases the morbid effects of the acrid and putrid matters which are sometimes discharged from carious teeth, or from ulcers in the gums created by them, also the influence which both have in preventing mastication, and the connexion of that animal function with good health, I cannot help thinking that our success in the treatment of all chronic diseases would be very much promoted by directing our inquiries into the state of the teeth in sick people, and by ordering their extraction in every case in which they are decayed. It is not necessary that they should be attended with pain in order to produce diseases; for splinters, tumours, and other irritants before mentioned, often bring on diseases and death when they give no pain, and are unsuspected as causes of them. This translation of sensation and motion to parts remote from the place where impressions are made, appears in many instances, and seems to depend upon an original law of the animal economy."

It may be argued, no doubt, that in the mouth of persons who otherwise enjoy excellent health, stumps and decayed teeth frequently exist, and that therefore they are not to be considered as a cause of disease. Of course, in reply to this objection, it can only be stated that every acknowledged cause of disease may, if such reasoning is of any force, be discredited. We know that individuals do exist, in the enjoyment of robust health, in the midst of circumstances recognised on all hands as the fertile sources and promoters of disease, yet we do not on such grounds lay aside sanitary measures as irrational or uncalled for. The evidence in cases of the kind cannot be adduced with all the exactness and certitude of mathematical demonstration; but where analogy, and the results of experience and observation in a certain number of instances, lead to the conclusion that injurious consequences are in the circumstances possible, if not probable, we should attempt to avert them if the means seem at our disposal. So far as the present class of cases is concerned, I have no hesitation in stating the existence of dental disease to be a most prolific source of constitutional disturbance, quite apart from mere local irritation; that the removal of such a morbid cause is equivalent to the cure of many obscure and chronic constitutional derangements; and I feel confident that in such an assertion I will be supported by all who have had much experience in, or who have carefully considered, this important subject.

ARTICLE IX.—*Surgical Cases.* By PETER BROTHERSTON, F.R.C.S., Alloa.

(Read before the Medico-Chirurgical Society, 6th January 1864.)

Gunshot Wound of Right Side, with Fracture of the Eighth and Ninth Ribs, and Laceration of the Liver.

ON the evening of Friday the 11th of September 1863, I was hurriedly called to the tollhouse near Clackmannan, to visit Daniel Fergusson, aged 29, who had just received a gunshot wound of the right side, in the following manner:—When out shooting that evening he crossed a hedge, and dragged his gun, which was loaded, after him, with the muzzle pointed towards his body; the trigger was disturbed, and the contents of the gun lodged in his side. The wound was situated over the lower part of the right side of the chest; it was a ragged-looking opening, of a somewhat roundish form, of about two and a half inches in diameter. There was a great deal of hæmorrhage, and it had been plugged by a surgeon who was previously called in. The plugs were removed, and chloroform administered. I then found that the shot had fractured the eighth and ninth ribs; the latter was fractured completely across, and the fragments were driven into the substance of the liver. The lower end of the dorsal part of the rib was also thrust into the liver; it was withdrawn and smoothed with cutting pliers; the sternal fractured end of the rib was also smoothed in the same manner, and the fragments of the rib were removed from the substance of the liver. The diaphragm was wounded, and the cavity of the chest opened, though I could not discover any wound of the lung, or any pellets in this situation. On thrusting my fingers towards the bottom of the wound, which proceeded deeply between the integuments and muscles of the back, I found the gun waddings, between which was a considerable number of No. 5 pellets, which I extracted, along with a piece of the coat which they had carried along with them. The wound was sponged, and a compress of lint, dipt in cold water, placed over it.

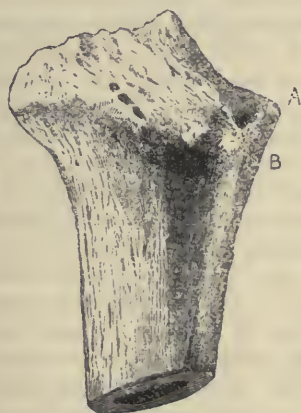
The next day the patient, contrary to my expectation, was wonderfully well; still he complained of difficulty in breathing, and considerable pain, and was expectorating bloody fluid, evidently showing that the substance of the lung had been more or less injured. Several pellets were extracted from a similar opening made on the fourth day; these had been unavoidably left in the wound. The patient went on to improve gradually, and in about three weeks he expressed a great wish to be taken to his own house in Clackmannan, a distance of half a mile from the house where he lay. The jolting necessarily caused by carrying him induced a copious discharge of serum, which I suppose must have come from the cavity of the peritoneum. He was rather worse for

a few days, but shortly afterwards the wound began to dry up, and was perfectly cicatrized by the end of November.

Removal of Portion of the Humerus : Cure.

On the 17th of July 1863, I was sent for to Devon to visit William Dawson, aged 14, who met with an accident in the following manner. He was employed in driving waggons under ground in the pits of the Alloa Coal Company. He had quarrelled with another boy occupied at the same work ; and while his waggons were standing, he was driven or pushed between two of them. The noise occasioned by his falling, together with the clamour of the quarrel, started the horse, which moved forwards, and Dawson was so placed that his elbow and shoulder were compressed between the two waggons. The result was, that the superior end of the humerus was

PORTION OF HUMERUS REMOVED.



A Great tuberosity.

B Bicipital groove.

thrust through the posterior part of the arm, leaving the epiphysis connected with the joint. To show the violence with which this injury was produced, I may state that the lad had on at the time of the accident a woollen shirt and jacket, and that the bone was protruded through these to the extent of nearly three inches, and was rubbed and dragged through the coal-dross on the ground, and completely covered with small fragments of coal. When I saw the nature of the injury, I thought it bad practice to reduce the bone, as it was entirely denuded of periosteum, and much blackened, though thoroughly washed, and all the fragments of coal having been removed. I at once sawed off the portion of bone to the extent of two and a half inches ; reduction was easily effected, and I found that I could keep the cut end of the bone close to the

epiphysis, if not actually into it, by the application of bandages and a pasteboard splint. The case progressed well, for about a month, when an abscess formed in front, over the clavicle, which was evacuated; after that the abscess healed, and the wound caused by the protrusion of the bone gradually closed. The bone has united with the epiphysis, and the shortness of the arm does not appear to be so great as might have been expected. The patient will still be able to follow his employment, or even to work as a common collier.

ARTICLE X.—*Note on the Prevalence of Urinary Calculus in India.*

By W. S. PLAYFAIR, M.D., M.R.C.P., Assistant-Physician for the Diseases of Women and Children to King's College Hospital, London.

IN the last number of the *Medical Journal* there is a letter from Dr Gairdner, which contains the following passage,—“I think it was alleged by Dr Marcet (or Dr Prout, I forget which) that its prevalence (*i.e. of calculus*) in Norfolk was owing to the diet of the inhabitants, and more especially to certain hard-boiled dumplings of which they were fond. On the other hand, its prevalence among the rice-eating population of India would seem to contradict this hypothesis, or at least to suggest inquiries as to the relative chemical constituents of the calculi of India and of England.”

From certain investigations I had occasion to make on this very subject a few years ago, I deduced some curious results, which I will venture briefly to relate, as they may possibly prove interesting to those desirous of making a more extended investigation into the causes of calculous disorders.

It is quite true that calculus is a common disease among the natives of India, but it varies very greatly in frequency in different parts of the country. In Lower Bengal I find only 15 cases of calculus reported in eleven public dispensaries, while in the North-West Provinces, during the same period of time, there occurred 828 cases in seventeen dispensaries. In the former district the staple article of diet is rice only, while in the latter this is replaced by a coarse kind of flour called otta, which is made into a heavy dough, and baked on iron girdles. The result is an article suspiciously like the Norfolk dumpling, to which certain authors ascribe such evil effects in causing the disease. It is certainly a remarkable coincidence, if nothing more, that the staple article of diet should be so similar in the districts of India and England where the disease most prevails. In the Madras Presidency the disorder is decidedly rare, there not being on an average more than one case in 3674 admissions; and in these districts also the natives live principally on rice. We must, however, I apprehend, look for something in addition to the nature of the food in attempting to

account for the prevalence of the disease, as even in the North-West Provinces it is chiefly met with in certain localities, the inhabitants of which are similarly circumstanced as regards diet to those of less affected districts.

With regard to the chemical composition of Indian calculi, I may state that I have carefully examined 115 specimens of urinary calculi extracted at Saharunpore by my brother, Dr George Playfair, now Principal of the Medical College at Agra. The principal point of interest with regard to them is, that those consisting of uric acid are in greater proportion to the whole number than in most English collections. In England these are as 1 to 3·5, while in India they seem to be to other calculi as 1 to 1·85, a considerably larger proportion. The proportion of the oxalate of lime calculus appears to be somewhat less than in England, viz., 1 to 18·5, instead of 1 to 14·5; but the proportion of mixed mulberry and uric acid calculi is large. This collection is now in the museum of the College of Surgeons of Edinburgh, and contains many interesting specimens, especially a remarkably large and fine calculus composed of cystic oxide.

Part Second.

REVIEWS.

On Australasian Climates, and their Influence in the Prevention and Arrest of Pulmonary Consumption. By S. DOUGAN BIRD, M.D. 8vo, pp. 168. London: Longman: 1863.

WITH a due allowance for the author's strong personal and grateful attachment to his adopted home, we cordially acknowledge his book to be of great value, both to medical men and others who take an interest in the Australian colonies. We cannot help feeling, as we are led on from page to page and chapter to chapter of a very entertaining narrative, that what we are reading is the truth and something more. And with the last page comes a frank avowal that our suspicions are not without foundation: the author admits that, "owing health and probably life to the Australian climate, I have found it difficult to avoid a partisanship of style, and to divest my judgment altogether of the bias of personal gratitude."

The climates of the southern hemisphere have not been much investigated in a pathological point of view, and we welcome the present work as an instalment of the contributions which, it is to be hoped, Dr Bird will make to climatological literature.

In order that change of climate may be curative in a case of incipient consumption contracted in Europe, Dr Bird insists upon the following conditions:—"That it should have an alterative action so complete and powerful that it will open not only a new leaf, but a new volume in the patient's constitutional history, and so change and modify the course of his vital functions, and more particularly the operation of his glandular and secreting system, that the probability of his blood again assuming the conditions under which tubercle was first formed will be very remote."

Climates that entirely answer these requisitions are not, in the author's opinion, to be found north of the equator; but in the southern hemisphere, especially in the temperate regions of the Australasian continent and islands, there are climates so remarkably in contrast to those of the corresponding latitudes in the northern hemisphere, that it is reasonable to suppose that a change from Europe to Australia may be productive of the salutary change of constitution so desirable in phthisical patients.

The climate of the colony of Victoria is quoted by Dr Bird as a medium type of the climate of Australasia. It is cooler than South Australia, New South Wales, or Queensland; warmer and drier than Tasmania, or New Zealand's southern districts. The main characteristics of the Victorian climate are thus summarised:—

"It is a temperate, warm climate, whose average summer heat is but two or three degrees above that of London; while in winter it is warmer than Nice or Naples, and as warm as Valencia or Barcelona; and actual cold is never felt at or near the sea-level. The air is generally dry, always stimulating and ozoniferous, but so tempered by the prevalence of ocean winds, that it is prevented from becoming irritating, like that of Nice or Provence. With this there is a very large proportion of sunny, cheerful weather during the whole year. In no climate with which I am acquainted is there so much pleasant weather during the year as in Victoria,—so many unclouded days, when it is neither too hot nor too cold,—and an invalid has, consequently, every temptation to be in the open air. The faults of the climate are connected with the hot wind, its high temperature and dust, and the sudden fall of temperature when it changes. But their advent is heralded by well-known signs; their disagreeable effects may be much modified by a little care, and may be almost or altogether avoided by a judicious choice of situation; and they are yearly diminishing in frequency and duration."

Dr Bird has used the means at his disposal for ascertaining the influence of the climate upon all classes; but reliable conclusions can scarcely be expected from the vital statistics hitherto afforded by the colony. In 1836, when the first census was taken, the number of settlers did not exceed 177. The population of Victoria in 1861 was 540,322, of whom about 68 per cent. were British born. It is plain, therefore, that the two classes of persons most subject

to climatal influences must bear a small proportion to the total population, whilst there will be a large preponderance of that class least susceptible of the influences of external causes. At only one vicennial period does the proportion per thousand of the whole population of Victoria exceed that of Great Britain, namely, between the years of 20 and 40, a period of life in which there is the strongest resistance to external influences. The number of males in the colony of Victoria, at the ages of from 20 to 40, per 1000 at all ages, is 554, whilst in Great Britain it is only 307; of females, in Victoria 429, in Great Britain 312. The number (per 1000 at all ages) of males under 20 years of age in Victoria is 296, in Great Britain 461; of females, in Victoria 472, in Great Britain 441. At ages between 60 and 80 there are only (per 1000 at all ages) 11 males and 8 females in Victoria, as compared with 62 males and 71 females in Great Britain.

But although the inhabitants of Victoria have had the advantage in point of age, they have had many disadvantages to counter-balance that. The social condition of a rapidly increasing colony must present many aspects unfavourable to health, especially in the case of a gold colony, to which many persons are attracted whose physical constitution is inadequate to the labour requisite to provide even a competency. Where so many other causes are in operation it is difficult to abstract the effects chargeable to climate. Other things being equal, infantile mortality may be regarded as a delicate test of the influence of the latter element. On this subject the author remarks,—“There has been a vast amount of misconception and error with regard to the mortality amongst children in this colony: so much so, that an impression prevails in the minds of many persons, that the climate has a peculiarly fatal influence on infant life. But this idea is perfectly groundless, and the reverse has been proved to be the actual fact by the Registrar-General, Mr Archer, in an elaborate paper on the subject, in which it is demonstrated that the deaths under one year have a percentage considerably less than those of most parts of Europe.” At the other extreme of life, it is maintained that the climate is admirably calculated from its dryness, average warm temperature, and stimulant characteristics, to prevent the most common causes of death. Although not equal in numbers, as indeed they could not be at this age of the colony, to the same class at home, old people are to some extent represented in Victoria,—a few instances of death at the advanced ages of 103 and 105 having been registered.

Not only are the seasons reversed in the antipodal colonies, but the relative fatality of the seasons is also reversed. In Great Britain, the death-rate reaches its maximum soon after Christmas, and gradually declines to a minimum about September. In Australia, the winter half of the year is the most healthy, the mortality gradually rising with the increase of temperature. The classes of disease which cause the greater number of deaths are not the same in the

two countries. In Great Britain, 40 per cent. of the annual mortality at all ages is caused by diseases affecting, either primarily or secondarily, the respiratory organs; but in the colony of Victoria, on an average of six years (1854-60), only 15 per cent. of the whole mortality was caused by such diseases,—the preponderating causes of death being fevers, dysentery, diarrhœa, etc. Hence, Dr Bird assumes a *primâ facie* case in favour of emigration to the antipodes as a cure for consumption. And he takes a broad and rational view of the influence of climate, attributing the general salubrity of the Australian colonies, and particularly their remarkable immunity, both from tuberculous diseases as a class, and also from complaints of the respiratory system generally, not merely to meteorological causes, but also to social changes, which are, however, also mainly due to the difference of climate; or, in his own words,—“It is distinctly to be accounted for, *first*, by the characteristics of the climate; and, *second*, by the altered circumstances and habits of the population at large, which also are greatly dependent on the climate.”

Dr Bird's experience of sea-voyages induces a favourable opinion of their influence. He believes that there are but few cases of consumption in any stage to which a long voyage in a comfortable ship will not be strikingly beneficial, especially to “patients who are rapidly wasting, with quick circulation, irritable mucous membranes, and a tendency to active congestion and hæmoptysis.” The discomforts on shipboard have often been urged as reasons for not recommending long sea-voyages to invalids; but Dr Bird, himself a *poitrinaire*, experienced benefit from two voyages to Australia, and he appears to consider such objections as by no means equal to the advantages obtained.

Dr Bird regards treatment of consumption by European climates as, at best, but palliative, whereas treatment by antipodal climates he holds to be generally curative. He recommends the change to be made in almost all cases, and at almost all stages. He describes colonial life, and gives a great deal of useful information, which intending emigrants would do well to peruse. This book contains valuable information conveyed in an agreeable manner; and we hope that Dr Bird will continue to prosecute his investigations into the influence of his adopted climate, and to favour his professional brethren with the results of his labours.

Military Surgery. By GEORGE WILLIAMSON, M.D., Surgeon-Major, 64th Regiment. London: Churchill and Sons: 1863.

WHEN wearied by the fierce wars of the Revolution and the first Empire, and longing for rest, Europe, in 1815, saw the sword at last sheathed, France quiet, because exhausted, and her disturber

banished to St Helena, the art of war had attained to great perfection. During the same period, Military Surgery—the art by which our peaceful calling is at once the minister and the alleviator of the woes of war—had made great advances, and acquired vast experience. It had attained to a literature of its own. Boggie, Blackadder, Ballingall, with the still greater names of Heunen, Larrey, and Guthrie, had left records of their skill, patience, and devotion. During the next forty years of comparative quiet, which, culminating in the Exhibition of 1851, had almost made men believe that the nations were to study war no more, few opportunities were given for the study of military surgery on a large scale. India, China, and Algeria were all too far off, and though Paris barricades now and then tempted enthusiasts across the Channel to study gunshot-wounds, still the veterans of the Peninsula and Waterloo were our authorities,—and well they deserved their position.

We may well be surprised to read Guthrie's account of how, in 1813, for twenty-four successive days the army marched towards Vittoria, fought the battle so named, and yet was within one month after it within thirty men as strong as when it fought the battle, and this without receiving any reinforcements from England! Such a result, compared with the first winter in the Crimea, shows what perfection of military management, and medical skill in preventing sickness and in curing wounds, long practice in campaigning had given.

Within the last ten years, the war with Russia, the mutiny in India, the fierce short Italian campaign, Mexico, New Zealand, China, Japan, and last, but not least, the American struggle, have given work enough for the military surgeons of the world.

The Crimean war found the medical staff of our army on a peace footing, far too few in number, and what was far worse, in consequence of its subordinate position, freed from responsibility, and therefore limited in power. We all know how, from these reasons, it seemed at first, like all the other departments, to fail, and we all know how admirably it did its work, and used the power when it received it, till the sanitary condition of the troops reached before the end of the campaign a better position, and with a less average death-rate, than would have existed in barracks at home.

It is hardly yet a matter of history, how our medical officers worked, and fought, and won their Victoria crosses; and it is little more than five years since the Royal Commission began its still unfinished work; but already the harvest is being reaped from the seed sown in the dreary Crimean winter and the Indian campaigns. Much remains to be done. Lord Herbert, who did so much, is gone; but the Military Medical School of Fort Pitt, now at Netley, and the improved warrant, are steps in the right direction, and signs that the Government and the country are beginning to appreciate the immense importance of the medical service in the prevention as well as the cure of disease.

The literature of military surgery has now to do with an altered state of matters. Rifled ordnance has in great measure supplanted the old smooth-bore field-pieces. Enfield, Whitworth, and Armstrong rifles, which are certain at 1000 yards, take the place of old Brown Bess, which was extremely uncertain at 100. In the Peninsula, it was estimated, that for every Frenchman hit, at least his own weight in lead had been wasted in misses; while the other day at Cawnpore, Longmore tells, that at one volley of one company, sixty-nine saddles were emptied. And besides their greater frequency, the character of the wounds has changed. Instead of the round bullet rotating on its own transverse axis, and being deflected by every obstacle, such as buttons, bones, or even tendons, the conical bolt flies straight, pierces, splinters, and shatters. All this has led to great changes in the diagnosis, prognosis, and treatment of gunshot wounds.

Another circumstance which renders the literature of military surgery at once more easily provided and more valuable, is, that our Government has now seen the value of the accumulation of statistical returns and pathological specimens, and endeavours to accumulate both with the greatest thoroughness and accuracy.

The book before us is an instance of the advantage of such fostering care, and a valuable contribution to military surgery. It is a reprint in an improved form of the author's "Notes on the Wounded from the Mutiny in India," now out of print, and consists of the cases mentioned in the former work, grouped and connected by simple practical remarks, chiefly embodying the results of the author's own observation, and further enriched by a table of contents and general index. The museum at Netley has been laid under contribution, the gunshot preparations described, and many lithographs of great beauty inserted.

As by general order, "all soldiers of cavalry and infantry of the line, invalidated on account of wounds, pass through the invalid dépôt at Chatham," Surgeon-Major Williamson has had the opportunity of thoroughly investigating the whole series of cases; and thus this work gives a fair and full idea of that class of wounds which, though not mortal, are still so severe as to render the patient either permanently disabled or maimed, or at least unfit for duty for months or years.

The cases are arranged on the principle of the now well-known classification of Inspector-General Taylor, C.B., and include a total of 842 cases from India, exclusive of many others cited, as illustrative, from the Peninsular and Crimean campaigns.

It would be impossible as well as unfair to do justice to a work of this kind either by analysis or extracts; but one or two points of great practical interest deserve notice.

The extreme fatality of penetrating and perforating wounds of the cranium and its contents, in these days of conical bullets, is shown by the fact that not one thus wounded returned from India,

and that every one of 91 such cases in the Crimea proved fatal. This is a good illustration of the dangerous character of modern projectiles; recovery from such wounds inflicted by the old round bullet not being uncommon, the ball having become encysted.

On the vexed question of "when to trephine in gunshot depressed fractures," Dr Williamson agrees with those who wait for signs of compression before operating.

A subject of great practical importance is treated most carefully and fully, namely, the treatment of compound fractures of the femur, the result of gunshot wound. Should the limb be amputated, or should attempts be made to save it? This is left still an open question depending very much (1.) on the part of the bone shattered—amputation at the hip or in the upper third giving a very poor chance of success; (2.) on the size and relations of the wound to vessels, nerves, etc.; and (3.) on the implication of the knee-joint.

But the practical point to be noticed is, that out of 842 wounded and invalided from India, 13 cases of compound fracture of the femur without amputation were found, 12 of whom had very good limbs, the other died more than a year after his wound, from necrosis—the result of a lodged bullet; while out of 2296 discharged after the Crimea, only 8 similar cases were found, 37 being the proportion which might have been expected.

In the surgical history of the Crimean campaign, we find 19 recoveries without amputation recorded out of 194 cases of compound fracture of the femur.

Now, what is the cause of this discrepancy. Dr Williamson ascribes it partly, perhaps, to a warm climate being better than a very cold one, but chiefly to the superior means of transport for the wounded in India, specially to the use of the *dooley as a means of conveyance*. He recommends the establishment, wherever it is possible, of a native corps of dooley-bearers, and his arguments are very forcible. With the exception of two cases, in which the M'Intyre splint was used for a short time, all these wounded thighs were treated by the long splint.

There is no doubt that the value of these statistics as bearing on practice would have been very much increased had the number been given of those who had received compound fractures of the femur, had been treated without amputation, and died in India; but a very interesting and carefully prepared tabular view of the proportion of such injuries recovered from, to thigh stump cases, and again to all wounds and injuries received in action, partly supplements this deficiency, and still further shows the far greater number of successful cases of compound fracture of the femur, with retained limb, in the Indian than in the Crimean campaign.

Both practically and pathologically, Dr Williamson's military surgery is valuable and instructive, demanding the careful perusal of every surgeon, whether military or civil. Pleasantly and easily

written, though in its style sometimes colloquial, grammatically almost incorrect, it is always intelligible, never even hazy.

A very brief and modest hint in the preface is the only indication in the book of the labour which the writer has bestowed on the museum which he so well describes, and which has given this valuable addition to the literature of gunshot wounds.

Scritti Medici Editi ed Inediti di Francesco Casorati, Membro effettivo del Regio Istituto Lombardo di Scienze, Lettere, ed Arti. Raccolti e Pubblicati per cura de' suoi figli. Volume I. Trattato delle Febri Intermittenti; preceduto da alcune Notizie sulla Vita dell' Autore. Pavia e Milano: 1863.

[*The Published and Unpublished Medical Writings of Francesco Casorati*, Member of the Institute of Lombardy, etc. Collected and Edited by his Sons. Volume I.: Treatise on Intermittent Fevers; to which is prefixed some Notice of the Author's Life. Pavia and Milan: 1863.]

THE pious care of two sons has in this volume endeavoured, and successfully endeavoured, to keep alive the fame of an excellent and somewhat distinguished father. It is true that neither the name of Casorati, nor those writings of his which have already seen the light, are in any sense well known in this country; but, on the other hand, that name is deservedly to be held in remembrance the possessor of which enjoyed the intimate friendship of such men as Giovanni Zanini, Gaetano Strambio, and Andrea Verga. It is to these three that we are indebted for the interesting and indeed eloquent notices of their countryman which occupy the first place in this volume. From these we learn that Francesco Casorati was born in Borghetto, in the province of Lodi, on the third day of August 1794; that he pursued his medical studies in the University of Pavia, and in 1814 there obtained his qualification to practise; that for some years he acted as assistant to the distinguished Professor Hildebrand; thereafter, from 1818 to 1827, discharged the arduous duties of a general practitioner at Lardirago, in the vicinity of Pavia, and again returned to the university in the character of an assistant teacher. Subsequently, other posts of professional usefulness and responsibility were occupied by Casorati, including the superintendence of the hospitals, civil as well as military, and the professorship of clinical medicine and special therapeutics, to which he was nominated by the provisional government of Lombardy. He died, after a long and painful illness, in 1859. The list of his contributions to medical literature is a long one, and affords ample proof of his diligence in the observation of disease, as well as of his judgment and resources in its treatment.

The volume before us contains a contribution of a very interesting character towards the illustration of a very favourite subject with Italian physicians, namely, *Intermittent Fevers*. The theme is discussed at considerable length, and evidently *con amore*. That portion of it which has interested us most, and best repays perusal, is in Part Second, where the author briefly but clearly sketches the different opinions entertained respecting the intimate nature of the class of Intermittents, from Galen down to Broussais. On the whole, we are led to conclude that the Signori Felice and Luigi Casorati have acted prudently and wisely in collecting the various writings of the parent whose memory they evidently most devoutly revere. The present volume is of these merely the earliest instalment. We wish them success in their undertaking, believing that in the production and reproduction of their father's labours they will be able to establish for him the character of "*vir probus, medendi peritus*."

On the Immediate Treatment of Stricture of the Urethra by the Employment of the Stricture Dilator. By BARNARD HOLT, F.R.C.S., Senior Surgeon to the Westminster Hospital, etc. London: John Churchill and Sons: 1863.

A SURGICAL malady which is at once frequent, obstinate, and progressive, which is productive of excessive discomfort, and if left to its course, inevitably shortens life, soon accumulates round it a literature of its own.

Merely to catalogue the various plans of treatment of stricture of the urethra would require a volume, but the accepted ones are now few in number. The days of forcible tunnelling and burning through strictures by caustics are now nearly over; the Hunters and their followers having shown that a stricture is not a mere inorganic obstacle to be bored through, but a morbid thickening of the canal, which we must ask the aid of nature to remove by absorption. The basis of modern treatment, then, is the introduction of suitable instruments gradually increasing in size, at proper intervals, not merely for the sake of the mechanical dilatation they effect, but as the best possible stimulus to absorption.

But, as certain cases have peculiar tendencies to resent and resist such treatment,—some, the irritable ones, resenting it by constant attacks of "stricture fever" after every passage of the instrument, others, the spasmodic or resilient ones, resisting it by a delusive yielding, and a sudden return to their pristine tightness,—other means of treatment had to be devised. The chief of these, and the only one of real practical value, was Professor's Syme's well-known operation for the division of the stricture by incision from without on a grooved staff, which at once allowed the largest instruments to

be passed into the bladder, evacuating its retained contents, removing the irritable or spasmodic condition of the canal, and allowing Nature's work of absorption to go on, hastened and aided by the occasional passage of a bougie. This, one of the greatest improvements in surgery of the age, has restored hundreds of cases to health, is almost absolutely free from danger to life, and, if the use of bougies be maintained at intervals, ensures a complete and lasting cure.

The work now under review is the description of another plan of treatment for attaining the same ends, invented by the well-known and highly respected senior surgeon of the Westminster Hospital.

This is the second edition, though the first appeared only two years ago, and the result of the experience of 100 cases which it contained, is only confirmed and strengthened by 150 more, treated during the short intervening period. As most of the profession are by this time aware, the principle of Mr Holt's cure of stricture is the instantaneous and complete rupture or forcible dilatation of the stricture by an ingenious though very simple instrument of his own invention, which is fully described in the text. The mechanical ingenuity displayed in the instrument is very great, combining strength with safety; for the perforated guiding rod shows when the instrument is in the bladder, by permitting a flow of urine, while the conical tube, which, by its insertion, opens the blades of the dilators and ruptures the stricture, is prevented from making false passages by being guided on the perforated rod.

Now, on estimating the value of any new operative procedure, there are four questions which may be asked with advantage regarding it. Is it based on sound surgical principle? Is it safe? Is it easy? Is it successful? and this, in stricture cases, must include the question, Is its success permanent? In answer to the first of these questions, this operation seems founded on true surgical principle, not being intended by mere mechanical violence to remove a stricture, but only, as in the operation by incision, to put nature in a better position for doing her work of absorption, for which end bougies must be passed at intervals after the operation, to aid her efforts. On the comparison between a wound such as Mr Holt's instrument makes, and the incised wound of a cutting operation, the author's own views are the following:—"The only difference between an incised wound and a rent is, that the former, if the edges are left approximated, heals much more quickly than the latter, and so more speedily induces a recurrence of the contraction." Is it safe? Every one of Mr Holt's 250 cases, besides some which other surgeons have operated on, has proved successful. Is it easy, (1.) For the patient? In slight cases it is almost painless, and in more severe cases the fact that it can be concluded at a single sitting, permits the use of chloroform. (2.) For the surgeon? Yes, if only he can pass a bougie through an almost impermeable stricture, but not otherwise. Mr Holt lays stress on the easiness of his

operation, contrasting it with the difficulties of Mr Syme's operation ; but he almost forgets that, while in the hands of both these great surgeons, both operations are easy, the mere rupture of the stricture, or the incision in the middle line of the perineum, is a much easier *part* of the operation than is the first passing of the perforated rod or the grooved staff.

Is it successful? It can at once rupture the stricture, so as to admit a No. 12 into the bladder; and the thorough manner in which this is done is shown in the only pathological specimen Mr Holt has given us, which is one on which he *operated after death*, in a very severe case who had died of fever before his treatment had commenced.

Is it permanently successful? Apparently so, provided the patient passes an instrument at regular intervals. Some of Mr Holt's cases are already of six years' standing, though, of course, most of them are only of one or two years; but he agrees with nearly all surgeons in this, to use his own words, that "We know not at present of any means by which a stricture can be cured without such after-treatment, any more than the orthopædic surgeon knows of any means of curing deformities without the application of some extending apparatus after a tendon has been divided."

One other remark we have to make; there are many cases of extremely tight stricture in which Mr Holt's instrument will not pass, as its point equals a No. 2 bougie, and within $1\frac{1}{2}$ inches of its point it at least equals a No. 4. In such cases where you wish the "immediate cure" at once, or where there is much tendency to resilience after dilatation, Mr Holt's treatment is inapplicable, Mr Syme's invaluable.

Quietly and modestly written, appealing to facts rather than to theories, preferring results to reasoning, this work will both spread Mr Holt's already well-earned reputation, and, what he will value far more, will help to lessen human suffering, and prolong human life.

The Treatment of Hoarseness and Loss of Voice, by the direct Application of Galvanism to the Vocal Cords. By MORELL MACKENZIE, M.D., London. (*Reprint.*)

THE introduction of the laryngoscope has done much to facilitate the diagnosis of functional and organic affections of the larynx. By its means, too, remedies may be accurately applied to the parts whose functions are deranged; and amongst such applications, it would appear from the paper before us, galvanism holds a very important position. Dr Mackenzie, who has devoted much attention to laryngoscopy, adduces fourteen cases in which, by means of an instrument of his own invention, the voice was restored after one or more applications of a galvanic current to the vocal cords, and that, too, in circumstances where the voice had been absent for a

year, eighteen months, and even three years. As such cases of functional aphonia are of frequent occurrence, and often resist all the usual modes of treatment, we would direct the attention of our readers to Dr Mackenzie's very interesting paper. It was read before the last meeting of the British Medical Association, and is to be found in their journal.

Part Third.

PERISCOPE.

SURGERY.

ON SYME'S AMPUTATION AT THE ANKLE-JOINT.

IN the February Number of the *Dublin Quarterly Journal of Medical Science*, Mr Glascott R. Symes, one of the surgeons of Dr Steevens' Hospital, Dublin, records two cases of this operation which he has recently performed with a satisfactory result. After stating that he was himself formerly prejudiced against this operation, and that it has not yet been very favourably received by the Dublin surgeons, Mr Symes goes on to say:—I am cognizant of two other cases in which the operation, or a modification of it, was performed, although the limb was ultimately amputated below the knee; yet I think it proper to record them, as they bear out the teaching of Professor Syme.

Surgeon S. A. Cusack and Surgeon Little, in the north of Ireland, both performed the modification of the operation as proposed by Pirogoff; in both cases the disease returned in the portion of *os calcis* left behind, and necessitated the removal of the limb. Mr S. A. Cusack removed the leg, in his case, when the patient was much reduced by the formation of many abscesses. In Mr Little's case, the leg was removed by Mr Walsh, in the Adelaide Hospital. The caries was confined to a very small portion of bone; he was not much reduced, but he was of such an irritable disposition that he insisted on the removal of the limb. These two cases bear out what Mr Syme says, that the *os calcis* is a bone predisposed to caries, and no portion of it should be left behind. In both of my cases this bone was so soft that it could be easily cut with a knife; although no sinus existed in the neighbourhood, I rest assured that had I left a portion behind, I should have, at a later period, been obliged to open up the stump and remove the offending substance.

I am sure that the above enumeration does not include *all* the successful cases which have taken place in Dublin; however, they are all which have come to my knowledge, whether successful or unsuccessful.

If one were to compare the stump in this operation with the stump after amputation below the knee, the advantage would be in favour of the former. Although the flat surface in front of the tibia, when the knee is bent, appears to be an admirable spot whereon to rest the whole weight of the body, yet, I venture to say, it is an unnatural stump, contrasted with the natural pad of the heel, which has to bear the weight of the body after amputation at the ankle-joint—it has to bear no more than heretofore. Many patients cannot use the artificial leg for a long time, and even then cannot bear its use for any great length of time together. This operation is probably more suited to the removal of disease than injured parts.

It is unfair not to give a patient—especially one of the lower orders—the

chance of this operation, when, if it fail, he is not in a worse position for amputation below the knee. If it be the rule in the upper extremity to save every inch—the smallest portion being of some use—why should not the same rule extend to the lower extremity?

An eminent authority on excision of the knee-joint, in London, is, I am aware, unfriendly to this operation; one of his reasons being that, in many cases, amputation below the knee has to be performed subsequently. In speaking of his own favourite operation he says that, should a case not be progressing to the satisfaction of the operator, he would not only be justified, but it would be his duty, to open up the wound again and remove, if necessary, another portion of either the tibia or femur, before resorting to amputation of the thigh. I have myself seen him acting in accordance with those views, and with the best results. He should be consistent in allowing the same line of reasoning for amputation at the ankle-joint. This is the very operation where such a course can be pursued with comparative impunity; the flap might be dissected off again and again, and portions of diseased bone removed with a minimum amount of danger attending such interference, owing to the distance of the point from the trunk.

Should cases present themselves to me where the lower end of the tibia was engaged, I would adopt the course pointed out by the above mode of reasoning, and give the patient a chance of an operation, which is as safe and simple in its performance as it is gratifying to all parties in its results.

CASE OF AMPUTATION AT THE HIP-JOINT. BY PROFESSOR GROSS, PHILADELPHIA.

MARGARET THOMPSON, aged 9 years, in November 1861, was scalded over nearly the whole of the left foot, leg, and thigh, and also on the right knee and leg, followed by extensive exfoliation of the epidermis. The affected surface, instead of healing, remained inflamed and painful. When she entered the hospital, five months before the operation, she was extremely thin, feeble, pale, and anemic. In January 1862, when I took charge of her case, she was in the most deplorable condition, frightfully emaciated, and in so much suffering as to require the constant use of anodynes. Fortunately, however, her appetite was pretty good; she ate heartily, and drank daily six ounces of brandy. The left limb was so much retracted that the knee nearly touched the chin, and the joint itself was almost completely ankylosed. In addition to this it was greatly withered, the thigh being hardly as thick as an ordinary wrist, and covered from the ankle nearly to the hip with one continuous scab, of a brownish colour, from two to four lines in depth, and exhaling the most horrible odour.

Convinced that she could not survive many weeks longer in this condition, I requested a conference with my colleagues, in regard to the propriety of amputation at the hip-joint. After taking into view all the circumstances of the case, only one of them consented to share with me the responsibility of an operation. I had myself, I confess, very little hope of success; still, the knife afforded the only chance, and I therefore determined to employ it. The stench exhaled from the limb was of itself sufficient to destroy her; for no means could be found to correct it in her painful and exhausted condition.

The operation was performed in the presence of the clinical class of the hospital, on the 29th of January, fourteen months after the receipt of her injury. The little sufferer, placed under the influence of brandy and chloroform, was apparently more dead than alive, so frightfully thin and exsanguineous was she. Important aid was rendered me during the operation by my colleagues Drs Agnew, Levis, and Kenderdine, in compressing the aorta and femoral artery, and in securing the divided vessels. Two flaps were formed, an anterior and a posterior, with a narrow catlin, the whole proceeding occupying less than twenty seconds. Altogether not two ounces of blood were lost. Brandy was freely administered as soon as consciousness was sufficiently restored; and in about three hours the flaps were carefully approximated by wire sutures and adhesive strips. Morphia was given to allay pain and promote sleep. Milk punch and animal broths constituted the chief diet, and were well borne by the stomach.

Margaret slept comfortably the night after the operation, and rested well all next day, as well as the following night, taking an abundance of nourishment.

1st February.—This morning Dr Keen made the following entry:—"Margaret is doing admirably; she is better than at any time since the operation—in fact, she is bright and cheerful. The wound is looking well; there is slight suppuration, but no evidence of erysipelas, which has been prevalent for some time in the house. The bowels are quiet; the sleep and appetite are good; and brandy is administered freely."

5th.—The case is progressing most satisfactorily. The wound, dressed two days ago, looks healthy, and discharges very slightly.

8th.—The bowels were moved spontaneously for the first time two days ago. As there have been neuralgic pains in the stump for the last few nights, two grains of quinia were ordered to be given thrice daily. Under this treatment the suffering rapidly subsided; and the next night she enjoyed five hours of uninterrupted sleep. She ate eighteen oysters yesterday, and takes daily nine ounces of brandy in the form of milk punch.

11th.—The wound has all healed, except a small space at the centre, where there is a little suppuration and bagging of the lower flap. The child is still greatly emaciated, but she is cheerful, and has an excellent appetite. She has been for some days taking quinia and tincture of iron. She consumes nine ounces of brandy every twenty-four hours; and is manifestly improving in strength and colour.

15th.—The wound is nearly healed; all the sutures have been removed, and several of the ligatures have come away.

From this time no regular record was kept of the case. The child continued steadily to improve in health and vigour; the discharge from the wound gradually ceased, and the stump ultimately assumed a solid, healthy aspect. The ligature of the femoral artery did not drop off until nearly three months after the operation.

Nearly two years have now elapsed since this case fell into my hands. When Margaret was last seen, about four months ago, she was fat and stout, with a good complexion, but was evidently labouring under serious valvular disease of the heart. The stump was well formed, and in excellent condition. The right limb was much improved in muscular development and strength, but still somewhat stiff at the knee. In a word, the whole appearance of the girl was in the most striking and gratifying contrast with that which she presented prior to the amputation.

The knee-joint of the amputated limb had been partially destroyed by inflammation. The cartilages were highly vascular, as were also those of the great trochanter and the head of the femur, the latter of which was covered by plastic deposits, partly organized, and at one point slightly ossified. The compact tissue of the femur, tibia, and fibula was abnormally thin and soft, while the areolar substance was everywhere remarkably red and injected. The periosteum exhibited no appreciable alterations.

The circulation of the limb in this case was easily and effectually controlled by digital compression of the aorta, owing to the very flaccid and empty condition of the abdomen. As an additional security, compression was also applied to the femoral artery at Poupart's ligament.—*American Journal of the Medical Sciences*, January 1864.

ANEURISM OF THE SUBCLAVIAN ARTERY—LIGATURE OF THE AXILLARY ARTERY—FAVOURABLE PROGRESS.

JAMES J., aged 32, a negro, from Barbadoes, was admitted into the Charing Cross Hospital, on December 1, 1863, under the care of Mr Canton, for an aneurism of the right subclavian artery. Three months before, he felt a sudden and severe pain at the inner end of the clavicle, just after driving a large nail with a very heavy hammer. This was followed by a pulsating swelling at the same spot. It was at first small, but had since much increased. His health had become more and more impaired, and his voice very weak.

When admitted he had no appetite; his nights were sleepless from constant pain in the arm and hand of the affected side, accompanied with numbness and some amount of swelling of the limb. The fingers were very much clubbed, contrasting remarkably with those of the opposite hand.

Examination showed a pulsating tumour behind the middle third of the clavicle, prominent both above and below this bone, and extending four inches in an oblique and outward direction. Pressure on the axillary artery stopped the pulsation, and by the stethoscope an aneurismal bruit was very distinctly heard. *Fremissement* was most felt over the innominate at the inner end of the clavicle. The pulse on the affected side was 98, and weak; that on the opposite side, however, was small also.

After his admission, opium was given in full doses, to relieve pain, with but trifling effect.

On Saturday, December 12, Mr Canton tied the axillary artery; the tumour immediately ceased to pulsate. The limb was wrapped in cotton wool. In the evening, the patient expressed himself as very much relieved; the temperature of the limb was but slightly diminished, and the following day the temperature of the two limbs was the same.

The artery was tied at the inner edge of the coraco-brachialis, as high up in the axilla as possible. On separating this vessel, a small branch was wounded near its origin from the main trunk. Mr Canton, therefore, after passing the double ligatures under the axillary artery, tied it by one of the threads above, and by the other below, the origin of the wounded branch.

In this case it seemed clear that the inner third of the subclavian artery was affected, as well as the outer two-thirds. Not only was there evidence of this in the fact that pain was first felt in the right sterno-clavicular region, but at the time of the operation there was *fremissement* in this position. This was further confirmed by the remarkable change in the voice, which showed that in all probability the recurrent laryngeal nerve was affected. To have tied the subclavian would have been impossible; and, therefore, the only choice was to perform the distal operation, ligature of the axillary—Brasdor's operation. Ligature of the subclavian in the first part of its course has been performed seven times, but never successfully. "The operation," says Erichsen, "is bad in principle, and unfortunate in practice." The distal operation for the cure of aneurism of the lower part of the common carotid has been successfully practised, but then it must be remembered that this part of the artery gives off no branches; whereas a very large trunk, the vertebral, opens into the subclavian. "Dupuytren (we quote again from Erichsen) ligatured the axillary artery under the pectoral muscles in a case of subclavian aneurism, two arterial branches being divided in the incisions through the fat and cellular tissue; and the patient died on the ninth day. This is the only instance, to my knowledge, in which the distal operation has been attempted for the cure of this disease." Still, no other operation than the distal could have been performed in Mr Canton's case, and the patient was at once relieved of pain; has had to this date, December 30, no unfavourable symptoms; the pulsation is less, and the tumour is firmer. His voice also is stronger than before the operation.—*Medical Times and Gazette*, January 2, 1864.

ON FOREIGN BODIES IN THE EAR. BY DR VOLTOLINI.

THE first thing we have to do is to assure ourselves that a foreign body really is within the ear, for it by no means rarely happens that persons apply under the belief that an insect or other body is within the ear, which the most exact inspection fails to discover. In some cases, inflammation of the membrana tympani is the cause of the deceptive sensation, and this becomes aggravated by the unsuccessful searching for the foreign body. On the other hand, persons sometimes have foreign bodies in the ear without being the least aware of it. The author removed a rolled-up, hairy leaf from the bottom of the meatus, in the case of a lady, who had not the slightest idea how it came there, and who consulted him for deafness of the other ear. In another case, a hexangular

glass bead was removed, the patient being entirely ignorant that she had any foreign body in the ear. We should always make a very careful examination, and, when possible, by aid of the direct rays of the sun. No artificial or reflected light is a substitute for this; but where it is not attainable, Dr Voltolini employs an apparatus of his own invention, which is also serviceable in laryngoscopy. The simplest means of all, however, is to fasten a wax-taper to the handle of a bright spoon, in such a manner that the flame exactly reaches to the bowl of the spoon. Taking the spoon by its handle, and holding the light against the ear, by looking over it we are not dazzled, and can explore at our leisure. While in some cases the symptoms caused by foreign bodies in the ear are of a frightful intensity, in others they are wholly insignificant, and do not attract attention to the seat of mischief. For want of due examination of the ear, many patients complaining of giddiness, stupor, singing in the ears, etc., are sent to Carlsbad, Kissingen, or the seaside, when all the mischief is due to a foreign body in the ear. Distant organs of the body may exhibit more or less considerable symptoms without, in some instances, the foreign body in the ear giving rise to any peculiar sensation, so that its presence remains unsuspected.

For the removal of foreign bodies we should first employ only the gentlest means, such as syringing the ear with warm water; and by this, substances of the most different form and composition—even lead-pencil—may be removed. Beyond a bent forceps, an ear-scoop with a long handle, and a small corkscrew, almost all the instruments recommended for this purpose are more or less toys, or dangerous. By means of the corkscrew, wadding and similar soft substances may be easily drawn out; and in many cases we can remove bodies by passing the ear-scoop behind them. We should never employ force, and never should pass any instrument a line farther into the meatus than we can follow it with the eye. For want of such precaution, many a patient has lost his life or his hearing. The first effect of rough procedures is to make matters more obscure, the bleeding and swelling which ensue rendering complete inspection impossible. If the gentlest endeavours (or syringing), during which the eye guides the hand, do not succeed, the body should be left at rest in the ear—ay, even were it a dagger's point; and strong as the expression seems, the author justifies it by reference to cases on record in which pointed bodies have remained for years in the ear with impunity. It is not meant to be said that bodies should in general be left in the ear, but that matters should not be made worse than they are by violent manipulations. Leaving the body in the ear, then, warm-water syringing, and soft poultices, are to be daily resorted to, until the ensuing suppuration loosens it and gives it a new direction.—*Preuss. Méd. Zeitung*, and *British and Foreign Med.-Chir. Review*.

ON THE TREATMENT OF DIPHTHERIA. BY DR C. D. MEIGS.

DR C. D. MEIGS, Emeritus Professor of Midwifery in Jefferson Medical College, Philadelphia, having been appealed to for an expression of his opinion regarding the best method of treating diphtheria, has written a letter to the editor of the *American Journal of the Medical Sciences*, from which we extract the following passage:—

Your fatal epidemic would prove far less fatal if the population could be rightly instructed as to the dangers of delay in the application of remedies. Too many of them are prone to defer the requisite attention, so that, when the physician is called in, the asphyxiative deposits are already begun, and sometimes gone to an incurable stage. It is vain to attempt to cure a man already choked to death! If called early in the cases, the fatalities ought to be few in any sensible man's practice.

Nitrate of silver is a *remedy* for the disease, but its power to cure depends, not on its *name*, but on its dose. I have no doubt it is most generally a very mischievous application, because it is ignorantly used as *escharotic*, simply because its *name* is the name of an escharotic. In putrid sore throat there is no occasion for the use of an escharotic, what is wanted is an alterative, not a destructive.

If you will light a spirit lamp and set it on a table and look at the flame, you will perhaps say: "Yon flame will burn my finger if placed in it." True enough, if you hold your finger there; but if you will pass your finger rapidly through the flame you will not feel the heat; if slower you will feel it; if slowly you will be burned: if you hold it in the flame long enough the burn will be a crispation. Now all this is equally true of nitrate of silver. With it you can make a contact absolutely indifferent, or you can warm, or stimulate, or burn and destroy with it.

The question, then, as to nitrate of silver is, what shall be the dose? There is no other question about it. But that question is a most difficult one. Make a solution of the nitrate, say two or three grains to the ounce of water, and taste it. If your impression is that it is strong enough, and not *too* strong, apply it by means of a sponge or a camel-hair brush to the inflamed tissue. If it gives the patient *any* pain, you have done him *harm*, which you have no right to do. I should say that you ought not to use more than three grains in the ounce, and perhaps two grains to the ounce would be more likely to be useful, particularly in the very beginning of the attack. Don't apply it oftener than once a-day. Use a gargle made by mixing a half-teaspoonful of Cayenne pepper, a teaspoonful of salt, a wine-glassful of vinegar, and half a pint of *boiling* water. Let the mixture rest for half an hour, then strain the liquor from a doubled cloth, and use a little of it for gargling the throat many times daily. If you come to a very bad case, fill a basin with water, with a block of ice in it, wring out a large towel from the iced water—wring it *very* hard—and wrap it round the throat—all round—and change it often. If the asphyxiation is really begun, give the patient hot brandy and water, or hot whisky-punch—plenty of it. It is vain to give *much* food—much food may overload the organs. The man is too ill to digest and assimilate as healthy people do. But as to drinks, you can hardly err in the abundance.

INTERNAL ADMINISTRATION OF BELLADONNA IN CASES OF SEVERE BURN.

EXPERIMENTAL physiologists have recommended belladonna for use in the treatment of burns, in the belief that it diminishes that state of the nervous functions under which reflex inflammations are likely to be originated. They assert, on the other hand, that of all remedies opium is the one most powerful in increasing this peculiar state, and that it ought consequently to be avoided. In clinical practice, however, we believe that this opinion is wholly disregarded, and that opium is the form of anodyne most commonly resorted to in these cases. Yet it is generally suspected that the causes of death after burns are, in a majority of instances, connected with reflex inflammations, *e.g.* ulcers of the intestine, pneumonia, etc. In a series of cases under Mr Hutchinson's care in the London Hospital during the last six months, the belladonna treatment has been tried. In some remarks at the bedside of a patient the other day, Mr Hutchinson stated that he considered the general results to have been fairly satisfactory. He adverted to the extreme difficulty of forming a trustworthy conclusion on such a matter, since these cases are, in their nature, never stationary, but always tend either to improvement or the reverse, and often with great rapidity. If, therefore, the remedy were commenced when the patient was very ill, it might chance to be just at the time when improvement was about to set in; and if, on the other hand, the patient got worse, it might fairly be alleged that the remedy was used too late. If, on the other hand, we should give it in cases in which, as yet, no serious symptoms had appeared, we might again be much led astray, since a great majority of burn cases do well without any special plan of medication. Mr Hutchinson stated that the cases in which the remedy had seemed to be most useful, were those of children in whom general febrile symptoms, attended with restlessness, loss of appetite, etc., had set in without any local complications. In several of these, there could be no mistake that the feverish state had passed away quickly and very satisfactorily under the use of belladonna. In no cases had he witnessed any ill results. If the burn itself was very painful, and the

patient unable to get sleep on account of the pain, then the belladonna seemed comparatively inefficacious to procure ease, and morphia was far more efficient. As a rule, no opium had been given to the cases treated by belladonna; but in a few, and those chiefly in adults, it had been found requisite to give an occasional night dose. Possibly more benefit might have been obtained had the administration of the belladonna been pushed to larger doses. The usual dose given had been a third of a grain three times a-day. In speaking of the less frequent results of burns, Mr Hutchinson mentioned a recent case in which acute inflammation of one hip-joint, followed rapidly by dislocation, had occurred in a child who had been severely burnt on the arm and chest. He was in doubt whether to regard it as a reflex inflammation, or as a consequence of pyæmia.—*Medical Times and Gazette*, January 2, 1864.

ON A SIMPLE DRESSING FOR RECENT BURNS. BY JOHN H. PACKARD, M.D., OF PHILADELPHIA.

IN the spring of 1853, while an officer of the Philadelphia City Dispensary, in Fifth Street, I was called one day to attend a German manufacturer of fancy soaps, in the neighbourhood, who had been severely burnt over the face, one arm, and the side, by the blazing up of a quantity of alcohol. I visited him for several days, using from the outset the "carron oil," or mixture of linseed oil and limewater, as I had been taught. But this failed to allay his pain, even with the aid of anodynes given internally; and becoming dissatisfied, he dismissed me, and procured the services of an old friend of his, formerly a surgeon in the Austrian army. On my seeing him a short time afterwards, he told me that his friend had given him immediate relief by the application of fresh lard; and the appearance of the injured parts was indeed surprisingly favourable.

Bearing this case in mind, I made trial of the plan suggested as soon as an opportunity offered itself, and was so well satisfied with the result that I continued its use. Since that time there have come under my care a great many cases of burns and scalds of all degrees of extent and severity; but none in which the simple dressing above mentioned has not answered well. It has repeatedly, I do not know how often, occurred to me to see patients who have had other dressings applied, but whose sufferings continued unrelieved until the lard was put on.

Some of these instances have impressed me very forcibly. One was that of a child about three years of age, to whom I was accidentally called. He had pulled a kettle of boiling water off a table upon himself, and was badly scalded over the face, upper part of the chest, and arms. His mother had applied linseed oil and limewater, but to no good purpose; he was screaming and crying violently with pain. Some fresh lard having been brought, I dressed his injuries with it, when he immediately ceased crying, and in a few minutes fell into a sound sleep. His recovery was very rapid.

Another case occurred to me a week or two since. A child four years old was reaching for some plaything on a mantelpiece over a grate, when his clothes (he was in petticoats) swung out against the fire, and he was instantly in flames. Before the fire could be put out he was burned over both thighs, both arms, the body, the back of the head, and slightly over the face. When I saw him, about two hours afterwards, he was suffering severe pain, and very restless, although dressed with carron oil. As soon, however, as the entire burnt surface was covered with fresh lard, he became easy, and remained so until his death, which took place in about eighteen hours from the time of the accident.

As has been already stated, these cases are among very many others which have come under my notice. They impressed themselves on my mind because of the very marked relief given by the lard when other means had failed. Moreover, in children, we can as a general rule estimate the amount of suffering by the amount of complaint made; whereas, adults will often either exercise self-restraint, or subdue the expression of pain, from the mere expectation of speedy relief.

The "carron oil" is well known to the public as well as to the profession;

so that it is often applied by the bystanders or friends, in cases of burn, before the arrival of the surgeon. Its use is advocated in preference to that of any other article, in an able paper on the injuries in question, contributed by Dr John Ashurst, jun., to this journal for July 1862; and this is the only one of the points so well set forth by him, to which I would take exception. The smell of linseed oil is very offensive and sickening, while the limewater, never wholly incorporated with the oil, is apt to evaporate at many points, leaving the linen or other stuff upon which it is spread sticking to the skin. By covering the dressing with oiled silk, we may indeed obviate this annoyance; but oiled silk, although usually at hand in a hospital, is seldom to be had in any quantity in private houses.

What we want to do, in dealing with a burn, as regards local treatment, is simply to protect it altogether from irritation; reference being had here to the early period of the case only, and not to its later stages, when stimulation is often called for. If, therefore, we cover the injured surface with a bland, unirritating and air-proof medium, our object will be gained. Such a medium I believe to be best furnished by fresh lard.

This material can almost always be procured in any desired quantity, and at the shortest notice. If salted, it can be easily deprived of the salt by washing with water. My own practice is to spread it thickly on pieces of very soft old linen or muslin (old tablecloths are excellent), and then tear off pieces of suitable size to amply cover the affected parts. The great object is to apply the dressing accurately to the surface. For the face, a mask may be readily made of a piece of the spread stuff, the eyelids, or ears, if involved, being first covered with small bits of it. When a limb is concerned it is better to tear off strips and wrap the part lightly with them, like a common bandage, except that no reverses are made. Or reverses may be made, the surface of each being smeared with the lard before it comes on the skin. As it is impossible to dress burns neatly, we may as well discard at the outset all idea of doing so, and aim wholly at promoting the comfort of the sufferer.

In very warm weather, or when the patient is to remain in a heated atmosphere—an important advantage in almost every case of severe and extensive burns—the lard may be deficient in “body;” it is then necessary to add to it a small proportion of simple cerate. About one part of cerate to four or six of lard will usually answer the purpose.

So much has been written on the treatment of burns, from the earliest times to the present day, that it may seem presumptuous to attempt to throw any new light on the subject. But, so far as my reading goes, the simple dressing I have now advocated has never been more than mentioned by any writer, nor have I met with any knowledge of it among my professional friends. So completely has it satisfied me, after a very extensive trial, that I feel bound to make its value known to others, confident that they will not be disappointed in its effects.—*American Journal of the Medical Sciences*, January 1864.

MATERIA MEDICA.

OIL OF MALE-FERN IN TAPEWORM.

One of the therapeutic inquiries which it was decided to institute at the last meeting of the British Medical Association, was with regard to the action of male-fern in tapeworm. Dr Fleming of Birmingham was appointed reporter, and his report has been recently (16th January) published in the *British Medical Journal*. Returns were furnished regarding the use of the remedy in 100 cases; Dr Fleming's report founded upon these is as follows:—

Sex. Of these 100 cases, 30 were males, and 70 females.

The remarkable preponderance of the female sex among the subjects of tapeworm here shown, and, as I believe, for the first time on numerical data, is full of interest in relation to the cause of the disease, and most deserving of further

inquiry. The great majority of the cases embraced in this report are taken from hospital out-patients, among whom the women suffer frequently from dyspepsia, very much more so than do the men; and we can readily understand how the "measle" will have a higher chance of escaping death in a weak stomach, and subsequently making a home for itself in the bowels. As respects the diet itself, the risk run by men must be greater than that by women, as they eat a larger proportion of animal food, and, in Birmingham especially, or pork.

Our returns show that the male-fern, as a remedy, is of equal efficacy in both sexes.

Age. The age of the patient is not mentioned in 8 of the cases. Of the remaining 92, the average age of all, in round numbers, is 29; of the females, 30; of the males, 28. The returns include cases of all ages except infancy, and prove that the oil of male-fern is an efficient remedy as well in the child as in the adult. A child of 1 year and 11 months is the youngest, and a woman aged 69 the oldest example. The exclusive milk diet of infants, and consequent freedom from the cause of the parasite, explains their immunity from tape-worm.

The Duration of the Disease is not given in 33 cases. Of the remaining 67, it is stated to vary from a few days, as in 4 cases in Dr Anderson's schedule, to 36 years, as in the example reported by Mr Anderton. There are 11 cases whose duration varies from 6 weeks to 10 months; 16 are reported of 1 year's duration; 9 of 2 years; 4 of 5 years; 3 of 7 years; 3 of 10 years; 1 of 12 years; 1 of 14 years; 2 of 20 years; and 1 of 36 years. The returns show that the oil of male-fern has been as efficient as a remedy in cases of long standing as in the more recent.

Previous Treatment. In 35 of the cases, it is stated that there was no previous treatment. Among the remedies which had been used in the others, kousso was employed twice,—once with, and once without success; turpentine had been given on fifteen occasions,—seven times with, and eight times without success; the oil of male-fern had been previously used five times,—three times with, and twice without success; in one of those cases where it had failed, it was subsequently given in mixture with milk, in the mode which I have suggested, and with perfect success.

Dose, Time, and Mode of Administration. *Dose.* The medicine has been administered in doses of a few minims, of half a drachm, of one drachm, one and half, and of two drachms. The returns show that one drachm is a sufficient dose, at least, in the great majority of cases. The larger doses more frequently excite sickness, vomiting, and diarrhoea.

Time. In many of the cases, the oil was given in the morning; in a greater number, at bedtime. The results of the two methods, when compared together, do not show any material difference in success. I prefer to give the drug at bedtime, because the patient should continue to fast for eight or ten hours after taking it; and it is easier to do so during sleep than waking.

Mode. In 47 of the cases, the oil was given with milk, in the manner which I had myself suggested in the observations which accompanied the schedule. The following is the formula referred to:—

"Mix well of oil of male-fern one drachm, and mucilage half an ounce. This draught is mixed with one ounce and a half of sweet milk, and taken at bedtime,—the patient having omitted the dinner and evening meal of that day. Taken thus, on an empty stomach, the mixture is carried speedily into the intestines, to feed, and at the same time poison, the hungry parasite which nestles there. Milk is the favourite food of the worm. Next morning, a dose of castor-oil may be given. If necessary, this medication may be repeated daily, one, two, and three times, or until the worm is discharged."

In the remaining cases, the drug was given without milk, in mucilage or some aromatic water. In nearly all the cases comprised in the returns, care was taken to give the remedy on an empty stomach. The two classes of cases, therefore, or those in which the male-fern was given with milk, and those in

which milk was not used, admit of fair comparison; and of the higher efficiency of the first of these methods of exhibition the returns are conclusive. So given, the drug acts more quickly, and at the same time more efficiently. The proportion of failures is nearly the same with both methods; but the length of worm discharged, and, so far as we can judge, the thoroughness of the cure, predominate in those cases where milk was used.

Physiological Effects. Sometimes the medicine operates without pain or nausea; more often, there are sickness, griping pains, and purging. Vomiting is reported in ten of the cases. Dr Bree observes that, under its use, the urine was usually loaded with lithic acid. In one of Dr Anderson's cases, the menses, which had been absent for several months, returned after the use of the oil. The vomiting and purging were caused frequently by the second dose, after the worm had been discharged, and must be ascribed to the action of the drug itself on the gastro-intestinal mucous membrane,—not, as some have thought, to the dying struggles of the poisoned worm, though it may be that these play some part in their causation.

In five of the 100 cases, the worm was discharged alive. Except that it was expelled with unusual speed, I cannot trace any circumstance to account for the living state of the parasite in these examples.

The largest portion of tapeworm which is reported to have been passed is fifteen yards. This was in Dr Bennett's case. No mention is made of any other species of tapeworm than the *tænia solium*. Large round worms were discharged in two cases.

The worm was for the most part expelled after the first dose, but in a few cases not till after a second or third dose. The worm was often passed before any purgative was taken, and separately from the ordinary evacuation. In one instance recorded in Mr Thompson's schedule, the worm was discharged upwards by vomiting. This was the case of a female aged 40, who had suffered many years from tapeworm. She took one drachm of the oil of male-fern in milk, according to my formula, and, in the course of an hour, vomited a very long tapeworm, which was quite dead. None passed by stool. After two days, the draught was repeated, and she passed a large quantity of dead and broken tapeworm. The patient had previously taken various remedies without success. In Dr Anderson's schedule, the case of a girl aged 18 is narrated, who became very sick after taking two drachms of the oil of male-fern in milk, and vomited a large round worm. She was afterwards purged smartly, and passed a quantity of joints of tapeworm.

The average time which elapsed between the administration of the oil and the expulsion of the parasite was six hours. It was discharged in half an hour in seven cases; in one hour in nine cases; in two hours in six cases; in three hours in three cases; in five hours in six cases. The longest interval mentioned is twenty-four hours.

In several of the cases the worm was passed in a broken and softened state. In these cases, a considerable interval had elapsed between the taking of the oil and the expulsion of the worm, the softened condition of which was probably due to a more or less complete digestion of the already poisoned and dead worm.

The head is reported to have been found in three cases (schedule of Mr Spender); but, in one of these, its discovery rests only on the authority of the patient. It is generally thought that the rarity with which the head is obtained is due to its not being killed and detached with the body; but it seems improbable that the poison should take more effect on the body than the head of the creature, and which it meets first in its passage downwards from the stomach. According to Dr Nelson, the food is taken in chiefly by the head. I am more inclined to refer the rare discovery of the head to its solution in the digestive fluids. Thin and delicate, it must be easy of digestion. Moreover, placed higher up in the canal, it is in closer proximity to the more active solvent juices. The thin and translucent neck, though found more often than the head, is also generally absent, and probably for the like reason. I am dis-

posed to refer relapses to the growth of other worms, which have escaped the action of the poison, and not to the resprouting of the old head.

Duration of the Cure. Though relapses often occur, there is reason to believe that the cure is permanent in a large proportion of the cases. The length of time (one year) assigned to this inquiry, and the difficulty of ascertaining the future history, especially of hospital patients, render the returns in reference to this important point unavoidably of less value than we could desire. I may mention in this place, that Mr Osborn, in a note to his schedule, states that two cases of tapeworm are known to him, both females, of 38 and 17 years of age respectively, where the oil of male-fern was used with success, and where the patients remained, to his knowledge, well for many years.

In concluding this report, it is only just to remember, in connexion with our subject, the early labours of Peschier of Geneva, and dating so far back as 1830, but which had been almost overlooked in England, until Dr Christison, in 1853, gave the sanction of his authority to the results of Peschier's trials. The later experiences of Drs Gull, Jenner, Bennett, Willshire, Ransome, and others, have abundantly confirmed their observations, and, conjoined with the results of the present inquiry, establish beyond doubt the great efficacy of the oil of male-fern in tapeworm, and its superiority to the other known remedies of this disease. Further, our report points very decidedly to the most efficient mode of exhibiting the drug; and the whole inquiry has, as I have reason to know, rendered excellent service to therapeutics, by making the virtues of the oil of male-fern more widely known and employed throughout the profession.

It remains only for me to offer my best thanks to all the gentlemen who made returns to me for their valuable aid in this inquiry.

DIGITALIS IN CARDIAC DISEASE.

As to the action of digitalis in cardiac disease there is a great diversity of opinion. In the *Medical Times and Gazette* of December 13, 1862, we published two cases in the practice of Dr Handfield Jones, at St Mary's Hospital, giving his experience of the action of the drug in cases of "dilatation and enfeeblement of the heart." He remarked that digitalis acts as a "cardiac tonic." Dr Sutton, in order to test the value of this conclusion, has prescribed tincture of digitalis in several forms of heart disease occurring amongst the out-patients of the Metropolitan Free Hospital. The following are the results of his observations:—

1. In cases of mitral regurgitation, with dilated hypertrophy and enfeebled condition of the heart, digitalis gives great relief, as in the following case:—A woman, aged 38, was so weak that she was led into the out-patients' room. Her feet and ankles were œdematous. Her pulse was very feeble and quick, but regular, and the heart's visible impulse was diffused and indistinct, and the apex was felt over the seventh rib. The first sound was inaudible at the base, and the second was of a very high pitch. There was a faint systolic bruit at the apex. Her complaint was, in her own words, "I feel so very faint." Fifteen drops of the tincture of digitalis, with the like quantity of tincture of the sesquichloride of iron, were given in an ounce of water three times a-day. Four days later she walked into the room without help, and said she felt much better. The bruit was more audible. She continued to do well.

2. In a case of chronic pericarditis, with very great effusion into the bag of the pericardium. A man, aged 30, complained of shortness of breath and great faintness. He was unable to move in bed without feeling very faint; his lower extremities were œdematous; his pulse very feeble and quick. The only sound of the heart that could be heard was the very faint, distant-like click of the second sound at the base. R. Tinct. digitalis. ℥xxv.; eth. chlor., ℥xv.; tinct. ferri mur., ℥x.; ter. die. s. Five days afterwards he expressed himself relieved. Pulse regular and stronger; no perceptible difference in the extent of dulness on percussion. The urine was not increased. The digitalis was continued for six weeks. He recovered so far that he could walk about the house, but he had a relapse, and died four months later. A post-mortem confirmed the diagnosis.

3. In aortic regurgitant disease it requires to be given with great caution. In one case, while taking digitalis, the patient's pulse became irregular, increased in frequency, and he died, with well-marked symptoms of intra-cardiac blood concretion.

4. In heart disease, with dropsy, it exercises no well-marked influence over the secretion of the urine.

5. In one case of aortic obstruction, with simple hypertrophy, and a strong, heaving impulse, digitalis was given in fifteen-drop doses three times a-day for fourteen days, when the patient remarked, "I feel the action of my heart much more troublesome when I take the mixture."

6. That in a case of aortic regurgitant disease, complicated with angina pectoris, the patient having an atheromatous physiognomy, digitalis was given for fourteen days. No relief to the pain; pulse irregular.

7. Digitalis is very beneficial in cases of the following class:—Men of middle age, of the sanguine temperament, and of the neuro-vascular diathesis, as described by Professor Laycock;¹ complaining of dyspnoea on exertion; very weak; appetite normal; pulse rather quick, easily excited, and soft; heart's impulse seen in the epigastrium, feeble to the hand; first sound inaudible at the base; second sound, high pitch; at the apex, first sound faintly heard. In one such case there was albuminuria; in two, arcus senilis. All these cases improved quickly while taking tincture of digitalis and iron. That it was not the effects of the iron was proved by the fact that they all had improved after taking the mixture three or four days.

8. It may be given cautiously for six or eight weeks in fifteen-drop doses in cases of enfeebled heart with mitral disease, without producing any irregularity of the pulse, but the reverse in aortic disease.

It will be seen from the above conclusions, that Dr Sutton confirms Dr Handfield Jones' remarks, that the most suitable cases for the administration of digitalis are those of enfeebled heart; that digitalis "seems to be injurious in sthenic, and beneficial in asthenic cases." The same with respect to Dr Corrigan's statement (to which Dr Leared called the attention of the profession), that in cases of aortic disease the effects of digitalis are injurious.

We will now give the experience of another hospital physician, Dr Wilks. Going round with him a few days ago, we saw at least a dozen cases of heart disease which had their origin in a former attack of rheumatism. When there was dropsy, the ordinary treatment was adopted; and when the heart was weak and irritable, iron and digitalis appeared to be Dr Wilks' favourite combination. He said that, as no medicine could alter the changes which had occurred in the valves, the only remedies which can be of use are those which tend to preserve the power of the muscular tissue, and, therefore, the great benefit of iron in weak heart. As regarded digitalis, he had always acted on the principle, that this remedy is efficacious in proportion to the weakness and irritability of the organ, and hence the reason why some had called it a tonic. Owing, however, to the prostration produced by its long continuance, a very prevalent opinion existed that it was a remedy not available in a depressed state of the system; whereas the opposite is the fact when the heart is concerned, a reduced frequency of the pulse being a more correct test of the influence of the medicine on the circulation than the force of the arterial action. Dr Wilks mentioned an instance where a patient was literally restored to life by its use. The case was that of a woman, who, having long suffered from disease of the heart, had a severe flooding after labour. She was apparently *in articulo mortis*; her limbs were cold; the body in a state of deathly clammy sweat; the face livid; no pulse to be felt at the wrist, and a mere fluttering to be heard when the ear was placed over the region of the heart. Brandy and ether had been given without any good effect, and, as dissolution was every moment expected, it was determined to try the effect of digitalis. Half-drachm doses of the tincture were given every hour, and after four doses a

¹ See *Medical Times and Gazette*, February 1 and 15, 1862, Lectures III. and IV.

reaction had taken place, and after seven doses complete recovery had occurred. The heart, though irregular, was beating with a defined action, and the pulse could again be felt. From this time recovery took place.

It must be remembered, however, that, as Dr Dickenson has shown, digitalis in large doses checks uterine hæmorrhage; but even if the improvement in Dr Wilks' case were due to this, the principle is probably the same, that digitalis is a tonic, not to the heart alone, but to the (organic) muscular system generally. In Dr Fuller's recent work on "Disease of the Chest" will be found some interesting remarks on the action of digitalis. He writes:—"It is a most valuable remedy when given in the treatment of dilatation, and is dangerous only in hypertrophy. Whenever the pulse is feeble and irregular, and more especially when, from any cause, its feebleness and irritability are temporarily increased, digitalis is, of all known remedies, the most useful."

The above views of Dr Handfield Jones, Dr Wilks, Dr Sutton, and Dr Fuller are not yet generally received by the profession. The exact reverse is generally held—that digitalis is valuable in hypertrophy and dangerous in dilatation. One of our most distinguished authorities on diseases of the heart, Dr Walshe, writes:—"If the power of the ventricles be seriously impaired, digitalis cannot be given without excessive risk, and had better be altogether avoided."

We require an extensive series of cases with careful observations as to the valves damaged, and as to the result, as regards regurgitation and obstruction (as aortic obstruction, for instance, is of infinitely less consequence than aortic regurgitation), but, more than all, as to the condition of the heart itself as regards hypertrophy, dilatation, and muscular power.—*Medical Times and Gazette*, Jan. 16, 1864.

THE CALABAR BEAN—ITS INTERNAL ADMINISTRATION.

THE Calabar bean, for the introduction of which into medical practice we are indebted to Dr Fraser and Dr Robertson, is now much used as a local application to the eye. It is antagonistic to atropine, not only in its effects on the iris, but also on the ciliary muscle; and it is its power over the latter—its power of restoring accommodation when it has been lost by any cause—as, for instance, from paralysis, or from the previous use of atropine for ophthalmoscopic examination—which renders it so useful to ophthalmic surgeons. It has now also found its way into our general hospitals as a remedy in certain nervous affections. There is a very interesting case of chorea, in a girl aged 11 years, now being treated in University College Hospital by this drug. Dr Harley, under whose care the patient is, began by giving one grain of the powdered bean for a dose, which was gradually increased to three grains three times a-day—(nine grains in the twenty-four hours). It was then further increased to four and a half grains for a dose; and latterly the patient has been actually taking six grains at one time, but in this case only once a-day. Careful notes have been kept by the physician's assistant; and, as we purpose giving them in detail, we may at present merely mention that the patient has much improved under the treatment. The only disagreeable effects that have followed the use of this remedy have been the occasional occurrence of brief attacks of colic, and once or twice slight vomiting. At first the remedy caused contraction of the pupils, and greatly accelerated the heart's action. The pulse was often 144, and on a few occasions 160 per minute. These effects, however, gradually became less apparent, as the patient gained in strength, and the system got accustomed to the remedy. The powdered bean, as employed by Dr Harley, forms an elegant preparation, and has the great advantage of being almost tasteless. The dose for an adult, Dr Harley says, is from three to six grains.—*Medical Times and Gazette*, Jan. 16, 1864.

NEW ALKALOID FROM THE CALABAR BEAN.

MESSRS JOBST AND HESSE, of Stuttgart, have instituted a chemical examination of the Calabar bean. They found the active principle to be contained

in the cotyledons only. It was obtained by treating the beans with alcohol, and then acting by means of ether on the residue left after evaporation of the alcoholic solution. The ethereal solution after evaporation left pure *physostigmine*. *Physostigmine* is a brownish yellow mass, amorphous, and in the first instance separated in the form of oily drops. It is easily soluble in ammonia, caustic and carbonated soda, ether, benzole, and alcohol; less soluble in cold water. From the ethereal solution it is entirely precipitated by animal charcoal. The watery solution has a faintly burning taste, a clearly alkaline reaction; it gives a copious kermes-coloured precipitate, with biniodide of potassium, and a precipitate of hydrated oxide in solution of chloride of iron; fused with hydrate of potash, it evolves fumes which have a strongly alkaline reaction. Acids dissolve it easily, and yield solutions of salts, which have mostly a dark red, more rarely a dark blue, colour. The hydrochlorate of *physostigmine* yields precipitates, with tannin acid, reddish-white: chloride of platinum, pale yellow; chloride of gold, bluish—a reduction taking place; bichloride of mercury, reddish-white. Twenty-one beans yielded only a little alkaloid. Two drops of a watery solution of the alkaloid placed on the eye caused the pupil to contract after ten minutes to about one-twentieth of its original diameter. In this condition it remained for an hour; after from four to six hours it had again assumed its former size. Taken internally, *physostigmine* is as poisonous as the most dangerous cyanides. The alkaloid from one bean was given to a rabbit. Five minutes afterwards it fell, remained motionless, and died twenty-five minutes later, or half an hour after the taking of the poison. *Physostigmine* causes contraction of the iris, even in the eye of an animal which has already been dead for some time. A rabbit's eye, treated with two drops of watery solution an hour after the animal had been killed mechanically, showed a contraction of the pupil to one-fourth of the other eye. A rabbit killed with *physostigmine* did not show this feature; but it was exhibited to a small degree by one which had been killed by cyanide of potassium. This shows that muscles, though dead, are yet liable to be influenced specifically, and not only by the galvanic current, but also by *physostigmine*.—*Ann. Chem. und Pharm.*, Jan. 1864; and *Brit. Med. Jour.*, Feb. 6, 1864.

ON GLYCERINE, AND ITS APPLICATIONS TO MEDICAL AND SURGICAL TREATMENT. BY DR DEMARQUAY.

DR DEMARQUAY has lately published a book on the therapeutical applications of glycerine. This substance has been used internally as a laxative, but its aperient effects are more evident when employed as an enema, in the proportion of two ounces of glycerine to sixteen of water. Fetid and gangrenous ulcers are modified by glycerine, and rapidly assume a healthy aspect, if the dressings are changed two or three times a-day. It forms a good dressing for malignant carbuncle, and in cases of burns it imparts to the injured surfaces a permanent sensation of coolness, due to its hygrometric properties. It is also a useful adjunct in the treatment of scorbutic, scrofulous, and syphilitic ulcers, and a valuable palliative in cancer. It possesses the property of dissolving iodine, and an injection of an ounce of iodine and three ounces and a half of glycerine has been found very efficacious in cases of deep-seated abscess, sinuses, scrofulous wounds, syphilitic bubo, etc. In diseases of the skin, glycerine is often more successful than pomades, as for instance in vulvular hyperæsthesia; in *pityriasis capitis* a combination of hydrochlorate of ammonia, glycerine, and rose-water, as prescribed by Dr Gueneau de Mussy, has been found very efficacious; and a sulphur pomade for scabies, made with glycerine instead of lard, possesses the advantages of not staining the linen, and being free from offensive odour. Dr Démarquay gives numerous formulæ, containing glycerine, applicable to the treatment of diseases of the eyes, ear, mouth, fauces, and larynx. In thrush, stomatitis, and ulcerative sore throat, M. Blache prescribes an application consisting of two drachms of biborate of soda and one ounce of glycerine.—*British and Foreign Medico-Chirurgical Review*, January 1864.

ON THE DESTRUCTION OF ALCOHOL WITHIN THE ECONOMY. BY M. BAUDOT.

WE wish to draw attention to some papers recently published by M. Baudot, which describe the results of a series of carefully instituted experiments. The physiological world was startled a little while since by an apparent demonstration, on the part of MM. Lallemand, Berrin, and Duroy, of the elimination of alcohol by the kidney, and its uselessness as an article of diet. The general experience of mankind received somewhat of a shock, and great was the jubilation of teetotallers, who, having long racked invention to discover charges against poor John Barleycorn, now unexpectedly found marshalled on their side grave Doctors, prize-winners at the Academy, test-tube in hand, bearing aloft the last new discovery. Alas for the stability of scientific conclusions and the practical consequences often somewhat too hastily deduced from them. M. Baudot now tells us that this is all a mistake, and one which we should feel somewhat ashamed at having made, seeing that an examination of Lallemand's experiments ought to have shown us that they will not bear the interpretation upon them. Unfortunately, the work did not come under M. Baudot's notice until recently, or we should have had his intelligent criticism applied to it before this. Analyzing the account of the experiments, he finds that by means of their ingenious apparatus, M. Lallemand and his *confrères* are only enabled to prove the elimination by the skin, lungs, and kidneys of 60 out of 225 cubic centimetres of alcohol, leaving 165 undetected, these 165 being in fact destroyed within the economy. M. Baudot maintains that alcohol is in fact perfectly destroyed in the economy, only as it is an eminently volatile and soluble substance, a small proportion may escape this intra-vascular combustion, and pass away by the skin, lungs, and urine. To the objections that alcohol is found in the blood and all the tissues, and therefore is not destroyed, it is replied that this is so only because the research for it is made only at a short period after its ingestion, a certain interval, sometimes as long as fourteen hours, always passing prior to its total disappearance.

In M. Baudot's opinion, a fair examination of the work in question ought to suffice for the refutation of the conclusions advanced by its authors; but in order to pursue the matter with still more exactitude, he has himself instituted a series of experiments upon his own urine and that of several other persons. The results were purely negative. It is true that traces of alcohol were sometimes detected, but this is not the point, the matter in dispute being whether the quantity of alcohol excreted with the urine, added to that rejected by transpiration and expiration, represents the totality of alcohol absorbed. In twenty-two experiments the delicate test employed by M. Lallemand detected alcohol only in two instances, 75 centimetres in the one and 10 grammes in the other, the first of these corresponding to about 4 litres of wine drunk, and the second to 305 cubic centimetres of alcohol swallowed. In the twenty other experiments traces were not discernible. In the urine of a man who drank a large quantity of alcohol habitually, M. Baudot found alcohol in appreciable quantity. It results, then, from his experiments that the old doctrine held by the world at large as well as by so many eminent physiologists is the true one. It is true that alcohol may in small quantities pass away by the urine, although this can be no general circumstance, as the most delicate tests have so often failed to exhibit it. Are we to look upon such excretion as a temporary or accidental fact, though still a physiological one? or is it of a pathological character, comparable to some extent to glucosuric? Awaiting further researches upon the subject, the author is much disposed to regard it as a kind of *alcoholuric*. Other important questions call also for attention. Thus, do the various forms of alcohol once swallowed comport themselves in the same manner (not as regards their physiological effects, which, in spite of what is said by some chemists, are entirely different) with respect to their resistance to intra-vascular oxidation? and does alcohol, whether concentrated or diluted, give rise to the same effects, in this point of view, as that which exists naturally in wine? Finally, what are the intermediary stages through which alcohol

passes when subjected to the action of oxygen within the economy prior to reaching the ultimate compounds which are eliminated? The following are the conclusions M. Baudot deduces from the examination of the portion of the subject which he has undertaken:—1. Alcohol swallowed in moderate quantity under the form of wine, kirsch, rum, or brandy, is not eliminated by the urine. 2. We may in certain cases discover scarcely appreciable traces of it in this fluid. 3. In other exceptional cases an appreciable quantity is found, but always very small in proportion to the amount swallowed. 4. Alcolometry properly employed is suitable for the detection of very small quantities of alcohol. 5. The solution of bichromate of potass in sulphuric acid is even a far more sensitive reagent than is required in these researches. 6. We may conclude that alcohol is destroyed in the economy, and that it fulfils the part of an element of respiration assigned to it by Liebig.—*Union Méd.*, Nos. 135, 140, 141, 142; and *Medical Times and Gazette*, Dec. 12, 1863.

ON THE USE OF ALCOHOL IN PHTHISIS. BY M. A. TRIPIER.

AT a meeting of the French Academy of Sciences, held on the 11th January, M. Tripier read the following note:—The first idea regarding the treatment of phthisis by alcohol is due to the experiments of M. Claude Bernard, who, having injected diluted alcohol into the stomachs of dogs at the commencement of digestion, found that digestion was arrested. The hypothesis of a local anæsthesia preventing the reflex phenomena of secretion having appeared to me the best explanation of the facts observed, it occurred to me that the ingestion of alcoholic liquids, taken in small enough doses to permit the preponderance of the local effect, would serve to prevent all the motor reflex manifestations which start from the stomach. The paroxysms of cough terminating in vomiting, which often occur in the phthisical immediately after their meals, being evidently phenomena of this nature, I thought I might be able to prevent them by reducing the sensibility of the stomach by means of brandy, and the result has been equal to my expectations. I do not, as may well be believed, pretend to cure phthisis by means of alcohol; but I think I may affirm that taken after meals it is serviceable in checking vomiting, and that far from exerting, as is commonly supposed, an unfavourable influence on the general condition of the patients, it relieves the cough and sweating, and procures sleep. (MM. Serres, Rayer, and Bernard were appointed a committee to report on this suggestion.)—*Révue de Thérapeutique*, Feb. 1, 1864.

Part Fourth.

MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XLIII.—MEETING III.

6th January 1864.—Dr DOUGLAS MACLAGAN, *President*, in the Chair.

I. SURGICAL CASES.

Mr Peter Brotherston, Alloa, communicated two cases, the first of a gunshot wound, the second of removal of a portion of the humerus, which will be found at page 826 of this number of the Journal.

II. LIGATURE OF THE COMMON ILIAC ARTERY.

Dr M'Kinlay, Paisley, communicated the particulars of a case of ligature of the common iliac artery, which will be found at page 808 of the present number of this Journal.

SESSION XLIII.—MEETING IV.

3d February 1864.—Dr HANDYSIDE, *Vice-President*, in the Chair.

I. TRACHEOTOMY IN ANEURISM.

Mr Spence showed a preparation of considerable physiological interest, and which was important with regard to a question of operative interference in similar cases. A woman suffering from what seemed to be a laryngeal affection, accompanied with suffocative paroxysms, was sent to be under his care by Dr Struthers of Leith. Mr Spence at once went to see her; but on his arrival found that in consequence of the urgency of the symptoms his house surgeon had already performed tracheotomy. When Mr Spence saw the patient he found that, although the tube was properly introduced, the operation had given very little relief to the suffocation. From the history it became evident that the case was one of aneurism, where direct pressure was made upon the lower part of the trachea, or on the large bronchi, and where consequently the introduction of the tube could not give relief. Still there had been suffocative laryngeal spasms indicating implication of the recurrent nerves. The case, no doubt, was one of a class where operative interference was contra-indicated; still there had been no time to inquire into the history, and had the suffocation been much of a nervous character it would have given a chance of prolonging life. As to the previous history, Mr Spence might state that the woman had been seen as an out-patient by Dr Warburton Begbie, who had diagnosed aneurism. On post-mortem examination the aneurism was found to press on the front of the lower part of the trachea; it involved the arch, and was closely applied to the upper dorsal vertebræ, which had been eroded, and, in fact, formed a portion of the wall of the sac; the left recurrent nerve was compressed. On examining the larynx the posterior crico-arytenoid muscle of the left side was found distinctly diminished in bulk. In conclusion, Mr Spence observed that in cases of aneurism the performance of tracheotomy should not be urged, for, as the result was generally unsuccessful, discredit was apt to be caused to the operation. Still, cases did occur in which it was the duty of the surgeon to interfere.

II. EXCISION OF THE WRIST-JOINT.

Mr Spence showed a preparation interesting chiefly in reference to the method of operation which had been adopted. The lower ends of the radius and ulna, the bones of the carpus, and the heads of the metacarpal bones were in a carious state, and Mr Spence had considered the case a favourable one for excising the wrist-joint. Two lateral incisions were made, one on each side of the wrist, the tendons were cleared from their grooves, and the ends of the radius and ulna were easily removed. The next part of the operation, the removal of the carpal bones, which was easy enough on the dead body, was in this case attended with considerable difficulty, as the bones were reduced to a sort of pulp. Mr Spence had been careful to save the tendons. The only ones divided were the long and short extensors of the radial side of the carpus, and the extensor carpi ulnaris. The patient had since been going on well, and gave promise of having a tolerably useful hand, extension and flexion occasionally being performed; still Mr Spence was not over-sanguine, as there was apt to be agglutination of the tendons, and the disease in this case had been very extensive. He had observed that excision had lately been performed in London by means of a semi-lunar incision; as the tendons were divided the performance of the operation was easy enough, but the result was not likely to be a very useful hand.

III. SUCCESSFUL CASE OF OVARIOTOMY.

Professor Simpson showed an ovarian cyst which he had lately removed. Four or five weeks ago he happened to have at the same time in his small ward in the Infirmary three cases of ovarian disease. Two of these three patients were tapped,—one for the first time, the other for the third time. Both of

the patients thus tapped, unfortunately died. In the third ovarian case, he performed ovariectomy, and the patient had recovered well. The patient on whom ovariectomy was thus performed was the mother of one child; she had been three times tapped, and the tumour had latterly attained a great size. When she arrived from Berwickshire, she looked very ill; the pulse ranged from 110 to 120; and, altogether, though she was very anxious for the operation, she did not seem in a very favourable condition for it. On cutting down, the tumour was found everywhere adherent in front, and the only difficulty in the operation consisted in separating the adhesions, and in finding the union of the sac with the abdominal peritoneum. The cyst with its contents weighed upwards of thirty pounds; one large cyst contained about twenty pounds of pus. The clamp was put on, but the pedicle retracted at once; Dr Simpson then pulled upon it, but as in doing so he dragged up and displaced the uterus, he fixed it by a modification of acupressure. The part beyond was clipped off, and all bleeding was found to be restrained. The acupressure apparatus consisted of a long needle passed on one side of the pedicle, and twice transfixing the stalk, and on the other side, of a strongish wire looped over each end of the needle, and drawn sufficiently tight. As a sharp needle could not be left in the abdomen, a small hood was put upon it, and the whole laid carefully down at the brim of the pelvis. Forty-six hours afterwards, Dr Simpson pulled at the head of the needle, and the acupressure apparatus at once came away. At the end of four days the wound was quite healed. Fourteen days afterwards, a small abscess formed in the wall of the abdomen at its upper part, and discharged; but the patient was now making a perfect and complete recovery. The only bad sign that ever showed itself was that the pulse rose at one time to 160. Dr Simpson observed that the next improvement in ovariectomy would probably be found to be in the method of treating the pedicle. Harm was apt to be done when it was kept stretched by the clamp; and probably the best plan would be to allow all to go back into the abdomen, and to remove the ligature at the end of a few hours. Dr Tyler Smith had performed ovariectomy eighteen times, with only three deaths. His practice was to tie the pedicle with strong cord, to cut the tumour short off close to this cord, and to let all go back into the cavity of the abdomen; he then tried to unite the wound from end to end. The result of this mode of treatment was the very successful one of one death in six operations, which was the best that any single operator had obtained. There were, however, two drawbacks to this method. The ligature around the pedicle was a foreign body, and the part of the pedicle beyond the ligature was necessarily in almost the same condition as a sloughing stump. By the modification proposed by Dr Simpson, both these sources of danger were avoided. Temporary pressure only being employed, no foreign body was permanently left in the abdomen, and there was little or no chance of the stump of the pedicle mortifying, as the needle did not embrace the stalk so as to prevent blood being supplied to the part beyond it.

IV. CAULIFLOWER EXCRESCENCE OF THE UTERUS.

Dr Matthews Duncan showed a cauliflower excrescence which he had recently removed from the cervix uteri of a woman, who had been reduced to the last degree of weakness by repeated hæmorrhages. The case had gone on well.

Dr Simpson had lately removed in the hospital, in two cases, such growths from the cervix uteri, by the *écrasseur*, one was very large.

V. DISEASE OF SEMILUNAR VALVES.

Dr Warburton Begbie exhibited a preparation illustrative of aneurism affecting one of the aortic semilunar valves, and likewise of recent rupture of the same valve. The patient, a man about forty years of age, had for some time suffered from a certain degree of breathlessness, but not to such an extent as to prevent him engaging in his own occupation, that of a sailor. He was at sea in the month of December last, and the ship in which he sailed being

caught in one of the severe gales which prevailed at that time, he was employed for some hours consecutively in assisting to raise, and throw overboard, some very heavy bags of grain; while so engaged, he suddenly experienced severe pain in the region of the heart, causing him immediately to desist from that occupation; and, from the time the pain occurred, he suffered greatly increased difficulty of breathing. The chief physical signs, as well as the general symptoms of the patient, indicated enlargement of the heart, with insufficiency of the semilunar valves. The aorta itself was found to be the seat of considerable atheromatous degeneration.

Dr W. Begbie was inclined to believe that the disease of the aorta and the aneurismal condition of the valve were intimately connected, and had probably been in existence for a considerable period. The rent in the valvular structure, on the other hand, was recent, and was probably caused a few weeks before the patient's death, when he was engaged on board ship in the manner alluded to.

VI. ON THE EMPLOYMENT OF TRACHEOTOMY IN DIPHTHERIA AND CROUP.

Mr Spence read a paper on this subject, which will be found at page 777 of the present number of this Journal.

Professor Miller had never listened to a more useful practical paper: it was one which had removed a great deal of doubt from his own mind. He was one of those who had been prejudiced against the performance of tracheotomy in diphtheria, but he must say that *Mr Spence's* facts had demonstrated that in future this chance of relief should be extended to a large number of cases of the disease. It was probable that the main use of future experience would be to show what the concomitant circumstances were which would show that the operation would not succeed.

VII. CASES OF INJURY OF THE URETHRA, WITH COMPLICATIONS.

Dr P. H. Watson read a paper containing the account of two cases of injury of the urethra, which will appear in the next number of this Journal.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XXII.—MEETING X.

24th June 1863.—*Dr PATTISON*, *President*, in the Chair.

I. ON INTRA-UTERINE AMPUTATION OF FŒTAL LIMBS AND THEIR RUDIMENTARY REPRODUCTION.

Dr Keiller read a communication on the above subject, and cited the particulars of several instances which he had examined, and of which he had procured accurate drawings. *Dr K.* exhibited sketches of the cases which had come under his immediate observation, some of which greatly resembled the case of the boy shown at the last meeting of the Society by *Dr Thomas Balfour*. *Dr K.* also reported the particulars of an instance of analogous congenital malformation of the feet and hands occurring in five children out of one family.

Dr Moir said that he had had one case of intra-uterine amputation, where the left arm was removed above the elbow joint.

Dr Thomas Balfour remarked that we sometimes had peculiarities in the offspring in a regularly alternating manner. He remembered of one instance where the first child had blue eyes, the second brown, the third blue, the fourth brown, and so on, repeated six or seven times in the order mentioned. Sometimes we had certain peculiarities occurring in the female, and other peculiarities confined to the male progeny of the same parents. In one instance the girls were all of a dark complexion, while the boys were albinos.

II. INDUCTION OF PREMATURE LABOUR.

Dr Keiller read the following notes of a case as reported by his class-assistant, *Mr Winbolt*:—

Mrs M., aged 42, applied to Dr Keiller in June 1863, requesting him to induce premature labour, under the following circumstances. She stated that she had been delivered of nine living children, and had had two miscarriages, during the last twenty years; that premature labour had been induced at the seventh and eighth months during the last four pregnancies; that the two miscarriages were between the second and third pregnancies. The dates of her pregnancies, and the nature of the labours, were as follows:—

	Date.	Period of Birth.	Nature of Labour.
1st child,	April 1843.	Full time.	Natural.
2d "	Jan. 1845.	Do.	Do.
3d "	" 1848.	Do.	Instrumental.
4th "	Aug. 1850.	Do.	Tedious, but natural.
5th "	Dec. 1851.	Do.	Instrumental.
6th "	Oct. 1855.	7th Month.	Induced Labour.
7th "	Nov. 1856.	Do.	Do.
8th "	Aug. 1859.	8th Month.	Do.
9th "	Dec. 1861.	7th Month.	Do.

On examination, the promontory of the sacrum was felt with the greatest ease; and, taking into account her previous history, Dr Keiller consented to induce premature labour. Accordingly, at 1:30 P.M. on 6th June 1863, Dr Keiller introduced his india-rubber air dilator within the os uteri, and dilated it sufficiently to separate the membranes to the extent of $\frac{3}{4}$ -inch round the os uteri. Slight uterine action commenced within two hours after the introduction of the dilator, and at 8 P.M. the uterus expelled the dilator. The dilator was reintroduced, and dilated in proportion to the size of os uteri. At 2 A.M. the uterus again expelled the dilator, which was then further dilated, and allowed to remain in the vagina. At 8 A.M. os uteri was nearly fully dilated, and in a very dilatable condition, membranes unruptured; and, as the patient began to get irritable and feverish, version was performed, and a small living female child extracted. Irregular uterine action followed (hour-glass contraction), and considerable hæmorrhage. Placenta forcibly removed, and hæmorrhage arrested by cold and pressure. Patient made a favourable recovery, and is now in the enjoyment of excellent health.

MEETING XI.

8th July 1863.—Dr PATTISON, *President*, in the Chair.

I. NOTES OF A CASE OF INVERSION AND EXCISION OF THE UNIMPREGNATED UTERUS.

Dr Keiller stated that he had received an interesting preparation from Dr J. G. Wilson of Glasgow, and which the Society would willingly examine, as it was of very rare occurrence. The specimen referred to was an amputated uterus, removed in consequence of irreducible inversion. Dr Wilson had kindly sent a few hurried notes of the case, which he (Dr K.) would take the liberty of reading to the Society.

"A middle-aged and healthy woman, who had not been pregnant for several years, whilst engaged in her usual domestic duties, was suddenly conscious of 'something internal giving way,' accompanied with a bearing-down sensation, and followed by the immediate appearance of a tumour at the vulva. There was no hæmorrhage.

"She was soon seen by Drs Dougan, Yeaman, and Dickson, who, after minute examination, satisfied themselves that the case was one of complete uterine inversion. It was at first supposed, and very naturally, too, to be a case of polypus; but the absence of the os encircling the upper portion of the tumour,

and the constitutional symptoms exhibited by the patient, etc., ultimately precluded that idea. Several attempts at reduction or reposition were now made by these gentlemen, but without success. I was requested to see her, which I did about midnight. I found her in a very exhausted and depressed condition, evidently suffering from shock. After careful examination, I arrived at the same conclusion as to the nature of the case as these gentlemen. I made repeated but unavailing attempts to reduce the uterus, while the patient was under the influence of chloroform. All that could be done was to push the uterine tumour well up into the vagina and out of sight, but *without reducing it in the least degree*. As the surface of the tumour was now getting somewhat softened, and assuming a dark appearance, it was deemed prudent to desist from further attempts at reduction. The softened character of the tumour gave rise to the idea that the fingers would go through it if more force were used, or even the same force continued; the danger of tearing the utero-vaginal connexions was also brought prominently into our calculations. The question for decision now was, whether to let the poor woman die in peace, or give her a chance of life by removing the uterine tumour. The latter was agreed upon, and, weak as she undoubtedly by this time was, she was removed to the Lying-in Hospital, in order to admit of an operation being better performed. Several medical gentlemen, in addition to those already named, joined in a consultation, and it was agreed that the tumour should be removed, as it was in one or two places assuming a semi-gangrenous appearance, and the patient was apparently getting into a dying state. After giving the patient a stimulant (she was so low as to render chloroform dangerous), I dragged the tumour well down, and passed the chain of the écraseur round what I conceived to be the *upper* (*i.e.* anatomically) portion of the cervix. The mass was removed in the course of a few minutes, without the least hæmorrhage. Soon after the operation, the symptoms of collapse exhibited by the patient became less intense. She progressed most favourably for *eleven days*, and was considered almost out of danger, at which period her husband having very incautiously and most imprudently communicated to her the sudden demise of her daughter, she became mentally depressed, refused her food, sank, and expired the following day."

Dr K., in exhibiting the preparation, pointed out what Dr Wilson had in a subsequent note observed, viz., that there existed a fibroid thickening of the fundus, that the corpus uteri was lined with peritoneum, and that in performing the excision the removal of the os was purposely avoided, believing that it would form a floor or barrier to the descent of the pelvic viscera, etc.

Dr Peter Young remarked that the uterus had been amputated at the junction of the lower and middle thirds, and that by far the larger portion of the mass removed consisted of a fibroid tumour which had developed itself at the fundus. From the position in which the tumour was placed, it would have been impossible to remove it without encroaching on the uterus. Had the tumour only been removed, it is very likely that the case would have had a more favourable termination; unfortunately, it was impossible during life to determine the precise nature of the protrusion. The case was instructive as showing that the best treatment to be adopted consisted in removing as little of the projecting mass as would allow of the remainder to be returned to its natural position.

II. CONVULSIONS DURING LABOUR.

Dr Peter Young read a communication on the above subject:—In August of the present year, I was called to see M. L., primipara, and unmarried. The midwife in attendance said that the breech of the child came down at seven o'clock in the morning, and, notwithstanding repeated uterine contractions, had not advanced in the least. About twelve o'clock, the patient was seized with a convulsion fit, which alarmed the midwife, who immediately sent for assistance. When I saw her, the patient had had two severe convulsive seizures, and was quite unconscious. The lower limbs were enormously swollen from œdema, and the face was considerably puffed up. On subsequent inquiry, it appeared that the legs began to swell three weeks, and the face a

week, before delivery. On examination, the breech of a child was found at the orifice of the vagina, and the scrotum, much swollen and livid, projecting beyond it. I immediately extracted the child in the usual way, and then found that there was a second child presenting by the head. In order to terminate the labour as soon as possible, with a view of preventing a return of the fits, I applied the forceps immediately, and extracted a female child. Both children were alive. I then introduced my hand into the uterus, and extracted the placenta, and while doing so, another fit came on. After this, however, no more fits appeared, and the woman regained consciousness in three hours. From this time the patient made a rapid recovery, and the oedema of the face and limbs disappeared entirely in less than a week. Three days after delivery the urine was examined, but it contained no albumen. As no examination of the urine was made prior to this, it is impossible to say whether it ever contained any. It is quite possible that the urine never contained any albumen, as the absence of it has been remarked in similar cases; at the same time, it must not be forgotten that the albumen often, in these cases, disappears very rapidly from the urine. This case is instructive as showing the great importance of a rapid delivery. There can be little doubt that the convulsions were induced by the prolonged irritation to which the passage was subjected by the ineffectual efforts of the uterus to expel the child. The impure state of the blood, owing to the imperfect action of the kidneys, would also favour the occurrence of the convulsions; but it is very probable, that in this case, at all events, no convulsions would have appeared had the delivery been effected, as it could easily have been, at an earlier period. Recently, M. Depaul published a treatise in which he strongly advocates bleeding—copious and repeated bleeding—as the best means of preventing parturient convulsions. He recommends bleeding at all stages of the labour, whether or not the labour can be terminated immediately by operative interference. No doubt venesection is sometimes useful in parturient convulsions, but its use should be confined to those cases where the convulsions occur at an early period of labour, before the os uteri is dilated, and when there is danger of apoplexy supervening. Even in cases where the convulsions appear before the os is dilated, bleeding may be entirely dispensed with, and the convulsions checked by the use of chloroform, as recommended by Professor Simpson.

Dr Keiller concurred in the statement made by *Dr Young*; as supporting the opinion that mechanical irritation of the passages had a strong tendency to induce convulsions; he might state that 77 per cent. occurred in primiparae. He (*Dr K.*) had seen several cases of considerable anasarca and albuminuria without convulsions, where the labour was easy. In those cases where the convulsions continued after delivery, and the patient was of a plethoric habit, venesection was advisable.

Dr Cochrane thought that, in cases of parturient convulsions, we should not bleed if it could be avoided.

MEETING XII.

29th July 1863.—*Dr PATTISON*, *President*, in the Chair.

I. ON OVARIOTOMY AND FIRST TAPPINGS IN OVARIAN DROPSY.

Professor Simpson showed a preparation of an ovarian tumour, removed by ovariectomy, and gave the following outline of the case:—

The patient was 24 years of age, and was unmarried. She had first observed the swelling about a year ago, while the swelling increased rapidly since that time. She had fallen off greatly in flesh, and become very anæmic. The tumour at the time of removal was larger than the pregnant uterus at the full time. By way of preparatory treatment she was put on tinct. ferri muriatis for a fortnight previous to the operation.

On June 18th, he removed the diseased ovary in the usual way. He commenced by inserting a trocar in the linea alba, a little below the umbilicus, and drew off about ten pounds of a dark reddish fluid. He then made a suitable

incision in the mesial line, and pulled through it the collapsed tumour, which contained, in a remaining cyst, two pounds of fluid. He next put a clamp round the pedicle and cut off the mass beyond. The edges of the abdominal wound were brought together by means of three long needles passed through the whole thickness of the parietes; and india-rubber threads were twisted over the two extremities of each needle in the form of a figure of eight. Six superficial iron-wire sutures were put in between and beyond the needles so as to bring the cutaneous margins of the wound into opposition, except at the lower angle, where the clamp and the end of the pedicle were brought out. Some pieces of surgeons' lint were placed beneath the edges of the clamp to prevent them from injuring the integuments. No dressing whatever was applied to the wound. The tumour was of the multilocular kind, and, after being emptied of all its fluid, weighed fourteen ounces; the weight of the fluid, exclusive of some which escaped, was above twelve pounds.

The pulse rose to 120 immediately after the operation, and continued at that rate for some hours. Next day it came down to 100; the following day to 90; then to 80 and 70, and in about ten days to 66, where it has remained ever since, with slight variations. The water was drawn off by the catheter every four hours or so, the patient complaining of a severe dragging pain in the lower part of the wound whenever the bladder became moderately filled. There never was any general abdominal tenderness or tympanitis. The needles were removed on the fourth day, the sutures on the tenth, and the clamp, along with the mortified stump of the pedicle, on the thirteenth day. One of the angles of the clamp had by its pressure on the skin given rise to a small abscess about the size of a pigeon's egg on the left side of the wound. The wound healed entirely by the first intention, except at the place where the pedicle came through. The site of the pedicle and clamp, however, long remained like a narrow elongated umbilical opening blocked up with serous tissue rather than skin. The patient got up on the nineteenth day, and on the twenty-ninth day she was removed to a residence a few miles out in the country.

To this history he (Professor Simpson) had only to add, that the fluid which was drawn off was of a very dark colour, from the admixture of decomposed blood. The patient had suffered from an accession of pain on three occasions, which may have been connected with the occurrence of the hæmorrhage into the cyst. However this may have been, there did not seem to be any inflammatory products mixed up with the cystic contents. Some of the fluid had escaped into the peritoneal cavity during the operation, and it was matter of question whether some attempt should not be made to get the whole sponged out. But, as he had learned from his conversations with Mr Baker Brown, that that experienced operator had found it better not to sponge out the peritoneal cavity, unless where blood had escaped into it, and coagulated there; and as in this case, no blood clots were present, he (Professor S.) simply closed the wound after the tumour had been extracted and removed. The sides of the wound had been brought together by means of pins, which in any future operation he would rather dispense with, as they had pinched up the flesh and probably kept the peritoneal edges from coming into direct apposition. No dressing had been applied, and none was needed in such cases, or, indeed, in any simple surgical wound. No medicine had been administered, with the exception of a single dose of morphia immediately after the operation. Only, as had been stated, the patient had been put upon iron for some time previous to the performance of the operation. The patient could not yet walk freely, perhaps because some deposit had taken place behind the wound, which might have been due to the long-continued presence of the clamp. The clamp in this instance had been attended with, at least, this drawback, that a small abscess had formed under the skin, though it had been carefully protected by pieces of lint placed under the points; and, probably, recovery would have been altogether more rapid had the pedicle been allowed to slip sooner into the cavity. The clamp kept the pedicle from descending to its proper place too long, and though it did not much matter here, yet in some cases this might make all the difference between the life and death of a patient. Perhaps, in-

stead of using the clamp, they might succeed in securing the pedicle by transfixing it from edge to edge with a strong needle, and constricting it by a loop of strong wire tied firmly over this needle, the point of which could be protected by a metallic shield, and the whole passed into the pelvic cavity. A wire attached to the head of the needle would serve to withdraw it after, say, thirty or forty hours, when the liberated loop of wire and the shield could also be removed by traction on their several wires.

In the discussion which had recently taken place in the Medico-Chirurgical Society, some of their surgical brethren seemed aggrieved because he (Professor S.) had spoken of the opposition that surgeons here had so long offered to the introduction of this operation. Yet, most assuredly, they had so spoken and written against ovariectomy and its performance, that it had been too long kept out of the list of legitimate operations. In illustration of these remarks, Dr S. quoted the remarks of Mr Liston and Mr Syme in their works on surgery. Though there had been good grounds for some of the objections when the means of diagnosis were less complete than they now are, the opposition and the resultant apathy had been maintained long after all ground of objection on this score had been swept away. He thought the whole history of this operation should teach us a deep lesson in charity and forbearance in the case of practical suggestions, which may seem opposed at first to all our notions of what is legitimate in surgery, but which, as in the case of ovariectomy, may prove to be of the utmost value. Even Mr Syme now allowed the operation to be legitimate, after long and strongly denouncing it. He (Professor S.) used to suppose that the existence of adhesions would prove an insuperable obstacle to the carrying out of it in special cases, although, now that the operation had been more frequently attempted, this objection has proved to be groundless. It might be that one in three or four of the cases will always die; but we could not doubt that the operation will become more perfect and less fatal, as surgeons go on applying themselves to its improvement. They must always remember that the death from ovarian dropsy in its usual uninterrupted progress was a most painful and distressing form of death. One point to be always borne in mind in treating of the value of this operation, was the great mortality of the disease under all other plans of treatment; and as he had an impression that it was more fatal than we were in the habit of representing it ourselves, he begged to ask what had been the experience of any of the older practitioners present? Could they remember any number of ovarian cases that had lived many years after the cyst had been first tapped? Or had they any now living?

Dr Burns said, that all his ovarian cases were dead now; and *Dr Menzies* and others made statements to the same effect.

Dr Keiller looked back with painful regret to the long list of interesting patients whom he had seen die of ovarian dropsy, and to the attempts at its palliation or cure. He could recall to mind many who had been under his care in the Infirmary, on some of whom he had wished the surgeons to perform the operation of ovariectomy,—the recent statistics regarding which, being decidedly in favour of its more frequent adoption. The serious undertaking of ovariectomy was a purely surgical procedure; and as such, ought to be within the province of the surgeon's duty. It might, indeed, be a question whether the practitioner in midwifery should, as a rule, undertake such strictly surgical work, but until it was acknowledged by our distinguished operators as a justifiable procedure, and until they ceased to decline to perform it, he (*Dr K.*), believing that many lives might be saved by operating in carefully selected cases, could not consider it otherwise than a simple act of duty on the part of the surgeon—accoucheur to have occasional recourse to the removal of ovarian tumours by abdominal section, the successful accomplishment of which, doubtless, demanded no small diagnostic skill nor common manual dexterity. He (*Dr K.*) could only call to mind one living case of ovarian dropsy where the disease was of some years' standing. It came to be an important question, whether we were not justified in having recourse to the operation of ovariectomy at once, without subjecting the patient to the dangers of first tapping. He had just seen a case

before coming to the meeting of unilocular ovarian dropsy which seemed free from adhesions, and altogether very favourable for ovariectomy; and it would be exposing the patient to a double danger if she were first to run the risk of tapping, and then be subjected to the radical cure.

Professor Simpson begged to add, that he had seen two cases of death from firstappings during the last nine months. In the one case there had been previous inflammation in the interior of the cyst, and the patient was very much reduced beforehand. In the other, the patient was healthy, and she looked altogether most favourable for ovariectomy; but, as her husband, a sea-captain, was away on a distant voyage, it was deemed more prudent to have recourse to tapping, which was followed by inflammation of the cyst, and death of the patient. Many years ago, he (Dr S.) had made the following remarks with regard to tapping (see *Obstetric Memoirs*, vol. i. p. 266):—"Tapping was professedly adopted merely as a palliative measure—for the present relief of the patient, not for the cure of the disease. In a very few instances the tumour appears to become bound down by adhesions after tapping, and no re-accumulation takes place; but these cases are so very rare, that in practising the operation we scarcely even venture to reckon upon the possibility of this occurrence. In some cases, where the tumour is very large, but the cells small, and containing gelatiniform matter, tapping is of no use, and cannot in any degree evacuate or diminish its contents. Fortunately for the success of this operative procedure, the anterior and superior cell or series of cells were generally large, and dilated more than the others, in consequence of least resistance being opposed to their growth and distention in this direction. And tapping, when adopted, though a palliative measure only, was by no means so free from danger as some practitioners think, and some writers would seem to allege. We had as yet no sufficient collection of data to show its actual results; but Mr Southam had commenced the inquiry, by tabulating the results of twenty cases of the operation. Fifteen of these cases had been recorded by Drs Bright and Barlow, without, apparently, any view to such an investigation, and hence afforded the more valuable and unprejudiced evidence. Four of the twenty patients, or one in five, died of the effects of the first tapping. Four patients died of inflammation, within a few days after the operation; three more died in one month; fourteen in all died within nine months after the first tapping. Of the remaining six, two died in eighteen months, and four lived from periods varying from four to nine years." This simple statement regarding the dangers of *first* tappings had been attacked with almost morbid violence. After all, it was the faithful inference of Mr Southam from his collected cases; and the subsequent larger statistics of Stafford Lee and Professor Kiwisch had only gone to confirm the probability of the accuracy of the deduction when it is made on a larger scale. Out of 110 cases of *first* tappings collated and recorded by Lee and Kiwisch, there died within the month 24 of the patients, or more than 1 in 5. Sometimes the operation of tapping resulted in the cure of the disease. He had lately seen a patient in whom the cyst had collapsed, and had not again refilled. In another case (as he was reminded by Dr James Young, with whom he had seen the patient in consultation) the operation had been followed by inflammation and closure of the cyst. But, such cases were rare, and we must rather expect a fatal than a favourable issue from the tapping of ovarian cysts. And it was not surprising that the operation should be a fatal one; for there must always be a risk of the escape of some of the fluid into the peritoneal cavity, except in those cases where the cyst had become adherent to the abdominal wall; and the fluid was often enough morbid and irritant in its qualities. And then there was always the danger of inflammation being set up in the interior of the cyst, so that after tapping you had the double risk of inflammation of the lining membrane of the dropsical cavity, and of the peritoneum, the former of which was done away with in the operation of ovariectomy.

Dr Keiller spoke of the difficulty of diagnosis, and mentioned two cases where the tumour had remained collapsed after tapping.

II. CASE OF EXTRA-UTERINE PREGNANCY.

Professor Simpson showed the preparation of a case of extra-uterine pregnancy, with the following history:—

Mrs K., æt. 33. Had been fourteen years married, and had born six children. She menstruated last on 25th December 1862. Six weeks afterwards, she applied to Dr M'Leod, who found her suffering violent pain in the back, and in the right side of the abdomen. She continued to have such attacks from time to time up to the period of her death in April 1863. Dr Simpson was called to see her, along with Dr M'Leod, on 26th April, when she was suffering from one of her paroxysms of pain. He found the abdomen somewhat enlarged, and on making a vaginal examination, felt the uterus between his two hands hypertrophied to some extent, and lying towards the pubes. The uterine sound passed into it about five inches. Behind the cervix, a fluctuating swelling was felt by the finger, and on auscultation over the abdomen, the sounds of a foetal heart were distinctly heard. Being satisfied that the case was one of extra-uterine pregnancy, Dr Simpson made a puncture with a curved trocar into the recto-vaginal space, close to the right side of the cervix, in the hope of evacuating the liquor amnii, and effecting the death and subsequent decomposition and expulsion of the foetus. The fluid which escaped was very dark and offensive, and amounted to about a pint. No change took place for a couple of days; but on the morning of the third, Dr M'Leod found her lying on her back, and suffering intense pain all over the abdomen, with her knees drawn up, and her pulse at 140, small and contracted. In about thirty hours after this she died. The sounds of the foetal heart could be heard almost up to the last.

Autopsy, 40 hours after death.—The peritoneal cavity contained a little dark-coloured fluid. The lower margin of the great omentum was very firmly adherent to the fundus of the uterus. The peritoneum showed slight traces of recent inflammation, especially over the small intestines, which were, however, quite free from adhesions. The foetus lay in a pouch or sac formed by the enlarged uterus and broad ligaments, the pelvic walls, and the sigmoid flexure of the colon and its meso-colon. The sigmoid flexure was firmly agglutinated to the fundus of the uterus, and to the free margins of the broad ligaments, or rather to the ovarian ligaments, as it seemed. Further, the rectum lay quite on the right side of the mesial line, and the sigmoid flexure was thus placed nearly in a horizontal position, running from the one side to the other. The broad ligaments and the sigmoid meso-colon were considerably expanded and thickened. The ovaries could not be detected, neither were the Fallopian tubes visible externally, though, after the uterus was opened, they could both be traced outwards, as very narrow tubes, only large enough to admit a thick bristle, for about six inches along the surface of the pouch in which the foetus was contained. The foetus itself had the appearance of being about six months old, and measured eleven inches in length. It lay with its breech lowest, and its anterior surface towards the left side of the mother. The umbilical cord was fourteen and a half inches long, and consisted of a vein and two arteries, covered by a serous membrane, without, apparently, any gelatine of Wharton. The placenta was broad and thin, and was attached to the posterior surface of the uterus, to the left broad ligament and the soft parts of that side of the pelvis, and to the sigmoid flexure of the colon and the upper part of the rectum. Under the microscope it showed villi, like those of an ordinary placenta. In texture it was softer and more spongy than usual. A transparent membrane lined the interior of the sac, and covered the foetal surface of the placenta. In this membrane the umbilical vessels ramified before entering the placenta. The uterus measured externally seven inches in length, and was three and a quarter inches broad at its widest part, which was near the fundus. A section of its wall measured one inch in thickness. It was of a pale flesh-colour, and, on microscopic examination, showed numerous smooth muscular fibres. The interior of the uterus was covered all over with a thin layer of a dark, mottled,

reddish substance, except at the very fundus, and in the cervix. This substance was of the consistency of cerebral matter, and was readily scraped off with the handle of a scalpel. It consisted of areolar tissue and minute twigs of red blood-vessels, mingled with amorphous matter and particles of oil. Immediately under this pulpy material lay the proper uterine tissue, containing non-striated muscular fibres, like those seen deeper in the substance of the organ, but shorter and less developed.

IV. PROTRACTED GESTATION. CAN IT BE PRODUCED BY MENTAL EMOTION?

Dr James Young brought before the Society the following communication from Mr Annan of Kinross:—

In the *Edinburgh Medical Journal* for February 1857, I gave an account of two cases, apparently bearing on the question of protracted pregnancy from mental emotion, one of these so far back as 1840, the other of a more recent date; supplementing my own remarks by a reference to the writings of Professor Simpson, Dr J. M. Duncan,¹ Dr Montgomery,² and others, relative to the duration of human pregnancy, its frequent irregularity, and occasional protraction; and expressing my opinion, founded on a lengthened experience, and concurring with Professor Simpson,³ “that the term of human pregnancy is not, as a general law, so very definite and precise as many practitioners think it to be; and that deviations from it, both in the way of diminution and excess of time, are perhaps far more common than is generally supposed among the members of the profession at large.” The following paper may be viewed as a continuation of, and addition to, the cases then given:—

CASE 1.—A. F., aged about 32.—Married at the age of twenty-one, she bore a male infant of average size, nine months and two days afterwards; and subsequently, exclusive of the last child, at intervals of from two, to two and a half years, six children, three boys and three girls, all of average size. On my endeavouring to ascertain the period of the last menstrual flow, she said she could not tell, as since the birth of her first child, near eleven years ago, she had never menstruated, having suckled her children for long periods. She added that her mother, who had born six children, the last being a twin birth, of which she herself was one, had never menstruated after the birth of her first child. In the present case, the woman was above the middle size, and well proportioned, but pale, rather emaciated and careworn in appearance; extreme improvidence, and habits of intemperance in her husband, who returned only once a-week to his family, being not the least of the depressing causes connected with her lot. I was credibly informed that, very shortly previous to her last labour, her children were seen in the fields in search of potatoes that might have been left on the surface of the ground. There were other circumstances, to be afterwards mentioned, which could not fail to add to her already overflowing cup of suffering. I was first called to see her on 20th April last; two medical men who had attended in her former labours not being at hand to give their assistance. She then stated that she considered she had attained to the end of the *ninth* month of pregnancy, and that continued uneasy feelings led her to believe that labour was on the point of commencing. On my stating that, from urgent professional reasons, I could not undertake to attend her, she seemed grieved and disappointed. On the following day, a medical man, I learned, who had not previously visited her, prescribed a quieting draught, but did not continue in attendance. In this state of uncertainty, daily, hourly, expecting labour to supervene, she remained till 15th May, when I received in the morning a most pathetic letter requesting that I would visit her, which I immediately complied with. The distress of body, and of mind also, she said, was very great; but as the os uteri was undilated, and the uterus itself still high above the brim of the pelvis, I gave, at intervals of six

¹ See Monthly Journal of Medical Science, July 1853, March 1854, and November 1856.

² Signs and Symptoms of Pregnancy.

³ Contributions to Obstetric Pathology and Practice; Monthly Journal of Medical Science, vol. viii., July 1853.

hours, two draughts, each containing 20 minims of sol. muriat. morph., with the effect of relieving her much. I saw her late in the evening of the 15th; and at 8 A.M. on the following day I was called in, when I learned that she had had regular and severe pains since the preceding evening. The liquor amnii having been discharged some half-hour previously, and the head of the child presenting, in about a quarter of an hour she gave birth to a female child of very large proportions, the placenta corresponding in size. When removing the placenta, she anxiously inquired if it was not "grown to?" The cause of her extreme anxiety on this score she did not then state, but at the conclusion of the labour, on my inquiring as to the cause of her alarm, she told me that about six months previously, when residing in Fifeshire, she had been for two whole days in waiting on a woman in labour (to whom she knew I had been called in aid of the surgeon in attendance), but who died ere I had got half-way to her abode. The case was that of a primipara in her forty-third or forty-fourth year; the child had, after two days of severe labour, presented by the nates, and had been with great difficulty extracted: and the placenta being adherent, hæmorrhage came on, death ensuing an hour and a half after the birth of the child. Of this case I afterwards received from the surgeon in attendance a full account in writing. Such were the circumstances in which this poor woman had been placed, and which she said had preyed deeply on her mind, to which the uncertainty in which she lived as to *who* might be her medical attendant in her hourly expected labour, gave additional poignancy—the reckless and dishonest conduct of her husband having induced her former medical attendants to keep aloof and refuse their attendance.

As in this case the child was so much above the ordinary size, and as I was deeply impressed with the idea, that here, as in my two former cases, mental emotion had something to do with the protraction of the pregnancy, I asked my friend, Mr W. Dewar, to see the woman and inspect the child, which, on being put into the scales on the following day, was found to be 11 lbs. 4 oz. avoirdupois in weight.

The remarks in my previous papers, and references in one of the notes,¹ render it unnecessary for me to add anything farther on the question as originally put by Professor Simpson, in detailing his very interesting case,—*"Could the protracted mental agitation and trial have in any way led to the prolongation of the pregnancy?"*

As regards the evidence afforded by the *great size* of the child, the remarks by Dr J. M. Duncan, quoted in my former paper, may not be out of place:—"One great reason for discrediting the evidence of most of the cases recorded by authors, is that we hear nothing of the great development of the uterus, or of the great size of the child, or of the placenta, in such cases, results which to say the least, might be expected. . . . On the other hand, the presence of this sign, in addition to others, is, in my opinion, powerfully corroborative of the protraction in any instance."²

CASE 2.—A. B., a good-looking woman, aged 26, of under size, the wife of a non-commissioned officer in the British army, to whom she had previously born two children, in the absence of her husband at the Crimean war formed a criminal connexion with a man considerably older than herself, gave birth some three years ago to a child, and was very recently on the point of giving birth to another. But being deserted by her paramour, who had up to this period liberally supported her, she suffered false pains and much mental anguish for five weeks, and gave birth to a female child weighing 11 lbs. avoirdupois. She was delivered with the forceps, and being still neglected and unprovided for, was after the lapse of twelve days seized with low typhoid fever, with delirium, of which she died at the end of the third week after the

¹ See Case of an Eleven-Month Pregnancy, by Dr Collins of Liverpool (Edinburgh Medical and Surgical Journal, vol. xxv. April 1826), and the Croonian Lecture, by Sir Everard Home, embracing remarks on "Force of Imagination in Pregnant Women," etc.

² Monthly Journal of Medical Science, vol. xviii., March 1854,—*"On Protracted Pregnancy."*

birth of the child—the victim of a broken heart, and another example, to all appearance, of pregnancy protracted by mental anxiety and suffering. Having attended her in the previous labour, and being engaged to wait on her on this occasion, she informed me that her calculation was that she had passed the time of her reckoning by about five weeks; and that she was correct was apparently shown by the size of the child, and her sufferings during the latter weeks of this pregnancy.

Case of very large Twins.—The following case of very large twins, with, at least, a strong probability, if not certainty, of protraction of the pregnancy, has just come under my care. And although there does not appear in this case any thing to warrant the opinion that *mental emotion* was in operation here, the whole circumstances are, I think, instructive, and not undeserving of being communicated to my professional brethren.

A. G., aged about 26, the wife of a farm-servant, who had born a child two years previously, after eighteen hours of labour pains, gave birth to twin children, a boy and girl, about fifteen or twenty minutes previous to my arrival, the woman residing a short distance in the country. One child was removed from the mother, the cord having been divided and secured by tape by one of the matrons present. The other child was still attached by the cord. The placenta, of a size corresponding to the children, were unattached to each other, but easily extracted. The great size of the boy, and full average appearance of the female child then engaged my attention, as being very unusual in twin cases. But not having at the time the means at hand, I am thus unable to give the precise weight of the children; but, judging from my previous experience, I am disposed to rate the weight of the boy at least, at 9 lbs. 8 oz. avoirdupois; of the girl at 6½ lbs., or even more—examples, I need scarcely add, far above the weight usually found in twin children, and to which after fully fifty years' experience, I have seen no case nearly equal. This I expressed to the grandmother of the children, and to another matron present, as very unusual; and ere I left, the former privately stated to me that her son, the reputed father of the children, had, from the pregnancy being so long past *his* time, expressed his doubts as to his being the father of the children. The parties, it was stated to me, were married only four months previously, but the husband fully admitted that he had had correspondence with the mother for nine months, specifying the dates, previous to their being united; that, however, his *last* interview in this way had been on 1st September 1862, in proof of which he stated that he had been almost immediately seized with gastric fever, by which he had been confined to bed for fully ten weeks, and that he could not be the father of the children, as he knew that, by counting up the time from 1st September to the period of the birth, 296 days had elapsed. The testimony of the old woman as to the illness of her son was clear; and in reply to her very pointed interrogations if such a lengthened pregnancy was possible *in a woman*, I was fain to have recourse to the answer by Professor Simpson to Mr Sergeant Shee, in a recent trial of some notoriety—that “a cow might be compared to a countess”—a mode of argument suited to her comprehension, and which she at once, from her *own experience*, admitted to be applicable—the more especially, she said, that the “great growth of the children” might be explained by the delay. And it is satisfactory to add that I was thus enabled to satisfy, and to preserve the peace of mind of all concerned.

Such are the simple facts in the above cases. Judging from accounts given in various obstetrical works, and in periodical publications, I am disposed to believe that not a few of the profession are still sceptical as to the protraction of, or deviations in, human pregnancy, save to a very limited extent, in almost any instance; not having the fortune to *see* cases of this kind, they either hesitate to give credit to the narratives of others, or, at least, treat them as exaggerations, so true are the well-known remarks of Horace, even in the present day—

“Segnius irritant animos demissa per aurem,
Quam quæ sunt oculis subjecta fidelibus.”

ARMY MEDICAL SERVICE.—ASSISTANT SURGEONS.

THE Director-General of the Army Medical Department presents his compliments to the Editor of the *Edinburgh Medical Journal*, and begs to enclose a List of the Candidates who were successful at the Competitive Examination in August last, and who have passed through a Course at the Army Medical School.

<i>Names.</i>	<i>Studied at</i>	<i>Marks.</i>	<i>Names.</i>	<i>Studied at</i>	<i>Marks.</i>
R. W. Troup,	Aberdeen,	5210	J. R. Greenhill,	London,	3572
W. R. Kynsey,	Dublin,	5100	H. R. Greene,	Dublin,	3511
R. W. Lawless,	Dublin,	4946	R. H. Bolton,	Dublin,	3315
J. F. Beattie,	Aberdeen,	4572	Hen. Morris,	London,	3289
R. B. Cunynghame,	Edinburgh,	4492	P. P. Lyons,	Dublin,	3259
A. Thomson,	Aberdeen,	4192	E. H. Condon,	Dublin,	3251
A. Turner	Aberdeen,	4015	Jas. Barker,	Dublin,	3224
A. F. Preston,	Dublin,	3926	Jas. Barry,	Cork,	3100
R. W. Forsayeth,	Dublin,	3776	C. A. Atkins,	London,	3092
J. Delmege,	Dublin,	3756	W. P. Smith,	Dublin,	3052
C. M'D. Cuffe,	Dublin,	3743	Geo. Fearon,	Dublin,	3032
V. S. Gouldsbury,	Galway,	3729	C. J. Weir,	Dublin,	3029
J. A. Shaw,	Dublin,	3710	Franc. Howard,	Dublin,	2989
Chas. Haines,	Cork,	3707	Fred. T. Byrne,	Dublin,	2983
F. Dick,	Edinburgh,	3693	Will. Elgee,	Dublin,	2784
H. C. Collier,	Edinburgh,	3622	Thos. White,	Dublin,	2573
J. E. Barker,	Dublin,	3619			

ARMY MEDICAL SERVICE.—EXAMINATION PAPERS.

A.—Written Questions.

I.—HYGIENE. (Dr E. A. PARKES, F.R.S.)

1. What are the special circumstances in the life of the soldier at home which are unfavourable to health? Enumerate the chief diseases causing admission into hospital, and mortality. How would you prevent the development of these diseases?

2. What are the effects of the inhalation of sewer-air? State the various means of removing sewage from dwellings. What are the principal disinfectants of air and sewage?

3. What are the general principles of clothing? Describe the accoutrements of the infantry soldier of the line, and discuss their effects on health.

II.—MILITARY MEDICINE.

(Deputy Inspector-General W. C. MACLEAN, M.D.)

1. Phthisis pulmonalis being a fatal disease in the army, you are required to give (a) its place in the official classification of diseases; (b) the causes which appear to operate in its production and propagation in the army; (c) the most judicious means of counteracting them; and (d) the symptoms, constitutional and physical, of the first stage, assigning to each its diagnostic value.

2. Define leucæmia, and give (a) the causes which appear to induce this condition; (b) its diagnosis; and (c) the most rational treatment.

3. Give an accurate definition of dysentery. Describe the symptoms and treatment (a) of the sthenic, and (b) of the scorbutic types of this disease.

III.—MILITARY SURGERY. (Deputy Inspector-General T. LONGMORE.)

1. Enumerate the several varieties of wounds of the head which may be caused by musket bullets, specifying the chief features which distinguish them from each other, and the influence of these features on your prognosis. Sketch, generally, the treatment to be adopted in each variety, and particularly mention what circumstances in any case would induce you to resort to the operation of trephining.

2. Give a description of the nature and consequences of endostitic inflammation, or osteo-myelitis, as observed after gunshot injuries of bones of the extremities, or after amputations consequent upon them; the treatment you would adopt; and the reasons for your practice.

3. A soldier is reported, by the Instructor of Musketry, to be incompetent for rifle-practice on account of defective vision, the nature of the defect being unknown. You are required to state whether the man's vision is defective or not; and, if it be so, to name what defect it is. On examination, the man is proved to be neither myopic, hypermetropic, nor presbyopic; but is found to be amblyopic. Describe the course of optical examination by which the diagnosis in this case is arrived at, explaining what sources of fallacy may be met with in the successive steps of the examination, and by what means you guard against them.

IV.—PATHOLOGY. (Dr W. AITKEN.)

1. Name and define, as concisely as possible, each of the several forms of continued fever which can be clinically recognised; and describe the anatomical signs which are peculiar and characteristic of typhoid and typhus fever on examination of the body after death from these diseases.

2. Mention the usual temperature of the body at completely sheltered parts of the surface (say axilla), and give a concise account of the value or significance attached to continuous thermometric observations in cases of acute diseases.

3. Mention the circumstances under which you would expect cases of (so-called) pyæmia or phlebitis to occur; explain the nature of such cases, and their post-mortem appearances.

B.—Practical Examination.

I.—HYGIENE. (Dr E. A. PARKES, F.R.S.)—(*First Day.*)

1. Examination of water: its physical character; determination of amount of chloride of sodium and organic matter contained in it.

2. Examination of water: temporary and permanent hardness; amount of lime.

3. Microscopic examination of adulterated flour.

(*Second Day.*)

1. Examination of adulterated beer.

2. Examination of adulterated milk.

3. Microscopic examination of adulterated coffee.

II.—PATHOLOGY. (Dr W. AITKEN.)

1. Examination of fluid containing parasitic remains.

2. Examination of morbid tissues.

3. Description of morbid specimens from the Pathological Museum.

4. Give the names of the parasites on the table.

5. Determination of the powers of lenses.

THE ROYAL COLLEGE OF PHYSICIANS AND CERTIFICATES IN LUNACY.

At an Extraordinary Meeting of the Royal College of Physicians of Edinburgh, held on the 19th February 1864, the following resolutions were moved, seconded, and unanimously agreed to:—

1. That the Royal College of Physicians of Edinburgh recognises it to be its duty, in accordance with its original charter (1681), to promote medical science, and also to protect the interests of the medical profession and of the public; and that, accordingly, the College has endeavoured, on various occasions, to establish a sound relation between the profession and the public in the matter of certificates in lunacy.

2. That the duty of signing certificates in lunacy is one at all times painful

and disagreeable, and one peculiarly liable to bring the medical man discharging it into collision with the patient or his friends, and therefore one of which, were it practicable, the College feels satisfied the profession would gladly be relieved.

3. That the duty of signing certificates in lunacy appears, nevertheless, to the College indispensable as a part of medical practice; and that both the public interest and the welfare of the insane themselves, require that it shall be performed as freely as is consistent with proper securities against abuse.

4. That the peculiarity of the position of medical men in signing such certificates is, that they are thereby brought in contact with persons who are not in full possession of their senses, and who, even after their discharge from an asylum, frequently retain a prejudiced or revengeful feeling against those by whom they were placed under treatment.

5. That the Royal College of Physicians approves of every reasonable security being given to patients and their friends in regard to confinement in asylums, and therefore was in favour of Section XXXVIII. of the Lunacy Act (Vict. 20 and 21, cap. 71), which provides that, "If any person shall grant any such certificate or statement as aforesaid without having seen and carefully examined the person to whom it relates, at the time and in the manner specified in such certificate, with a view to ascertain the condition of such person to the best of his knowledge and power, he shall be guilty of an offence, and shall for every such offence be liable in a penalty not exceeding fifty pounds; and if any person shall wilfully and falsely grant any such certificate, to the effect of any person being a lunatic, the person so granting such certificate shall be guilty of an offence, and for every such offence be liable in a penalty not exceeding three hundred pounds, or be liable to imprisonment for any period not exceeding twelve months." Prosecutions for these offences would be undertaken by a public prosecutor, who may be supposed to act without prejudice in the matter.

6. That the Royal College of Physicians has repeatedly endeavoured, during the progress of recent legislation in lunacy, to secure the introduction into bills before parliament, of clauses extending to medical men some protection, unless in cases where they have signed certificates in lunacy without "probable cause."

7. That the Royal College of Physicians is still of opinion that the legislature, which imposes by statute on medical men the duty of signing certificates in lunacy, is bound to give them some protection in honestly endeavouring to discharge that duty. The College therefore instructs the Council to spare no efforts to secure the introduction of a clause affording some protection, into any measure which may be brought before Parliament during the present Session.

Extracted from the Minutes of the Royal College of Physicians.

CHRISTOPHER DOUGLAS, *Clerk.*

OBITUARY.

DEATH OF DR JAMES GRANT, MEDICAL SUPERINTENDENT OF THE ROYAL INFIRMARY, DUNDEE.

THERE are circumstances of very peculiar interest connected with the death of this highly esteemed and most promising young physician. Within the brief period of seven months, three who have successively occupied the same responsible position have been cut down by fever; and of this disease, too, the matron of the Institution has quite recently died. The professional loss sustained by the deaths of Dr Glen, Dr Hamilton, and Dr Grant is very great. All were men who were confidently expected to advance the interests of medical science; and in the position of resident medical officers in the large and apparently complete hospital of Dundee, were regarded as peculiarly likely to confer on their profession benefits of various kinds. We have

no reason to doubt—in respect to Dr Grant we have every reason to believe—that had they been spared, what was thus expected, would have been abundantly realized.

We are glad to find that the sad events thus referred to have attracted universal attention in Dundee, and that there is a strong feeling regarding the necessity for making full inquiry into the causes upon which so signal and deplorable a mortality may depend. We have always understood that in respect to salubrity of position, and excellence of internal arrangement, the hospital of Dundee stood nearly if not altogether unrivalled. It may be so, but its directors, and all interested in its management, may feel assured that such an inquiry is absolutely required, and will indeed be demanded. Meantime, there can be no hesitation in urging on the consideration of those who have the appointment of our lamented friend's successor in their hands, the propriety of selecting a gentleman who has either already passed through fever, or whose antecedents have at least manifested—which is the case with some—that he possesses a very decided power of resisting its influence, and this is only to be looked for in one who has reached the middle period of life.

From an interesting article in the *Dundee Advertiser* of Saturday, February 20, we take the following account of the late Dr Grant's earlier career:—

“Dr Grant—who died yesterday, after fourteen days' illness—was a Forfarshire man, having been born in the parish of Tannadice in 1836, his father being Mr James Grant, miller at Milton of Ogil. He left home about twelve years of age to become a pupil teacher at the Free Church School at Errol, and passed as a second year's pupil at the end of the first year. When his engagement at Errol was concluded, he went to Edinburgh, and competed, at the Normal Schools, for a Queen's Scholarship, which he won, and held for two years. After he had finished his course at the Normal Schools, he studied for a couple of years at the University of Edinburgh. He then became a candidate for the situation of teacher in the new Burgh School at Forfar, which he obtained and held for eighteen months, at the end of which time he again went to Edinburgh and studied for another session, gaining the gold medal in the Mathematical class. After having thus given himself a good general education, he took to the study of medicine, which he continued at the same University till he graduated in 1862, in which year also he was admitted a Licentiate of the Royal College of Surgeons. His progress in all his classes was very marked; and his general character was of such a self-reliant and energetic nature as to give great promise for the future. In the year in which he graduated he acted for six months as one of the Resident Physicians in the Royal Infirmary of Edinburgh, in the wards of Dr Warburton Begbie, who, from the knowledge he then acquired of Dr Grant's abilities, recommended him very highly to the directors of the Dundee Infirmary. Dr Grant came to Dundee to commence general medical practice, on Friday the 6th of March in last year; and, during the following period of nine months, was gradually acquiring an extended practice. On the death of Dr Glen, on the 24th of July last, he became one of the candidates for the vacant situation of Resident Physician to the Dundee Infirmary; but, as is well known, that appointment was then obtained by Dr Hamilton. When Dr Hamilton also died, on the 14th November of the same year, it was decided by the directors of the Institution not to lose time by another competition of candidates; and, having been fully satisfied of Dr Grant's abilities, from his testimonials, references, and practice—and he, besides, being in Dundee, ready to fill the vacancy in the emergency—they unanimously agreed to offer him the vacant appointment. That offer was accepted on the 19th, and Dr Grant applied himself faithfully to his new duties, with the sad result we now know. In him the institution had, in every way, a worthy successor to Drs Glen and Hamilton..... Considering the shortness of his residence in Dundee, he had drawn to himself a large number of friends, by whom he will be sincerely regretted, not less for the intelligence of his conversation, than for the singularly unassuming amiability of his manner.”

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Report of Clinical Cases treated in the Surgical Wards of the Royal Infirmary, under the Care of Mr SPENCE, during the Session 1862-63.* By ARTHUR G. REID, M.D., late Resident Surgeon.

THE following pages contain an account of the more important cases treated by Mr Spence in the Surgical Wards of the Royal Infirmary during the session 1862-1863. They have been classified under the following heads:—Injuries of the Head; Tracheotomy; Amputations; Excisions of Joints; Tumours; Wounds; Fractures; Diseases of Joints; Diseases of the Urinary Organs; and Hernia. A few cases, which come under none of these heads, are grouped separately.

INJURIES OF THE HEAD.

W. F. was struck with a baton, and sustained an incised wound, two and a half inches long, over the sagittal suture. He was insensible for a few minutes. Hair was cut short. Rest, tepid-water dressing, and zinc lotion produced a cure in three weeks.

P. M'I. was struck on the forehead by a "putting-stone." Wound about two inches long, down the centre of the forehead. Symptoms of concussion, which lasted half an hour. Hair cut short; cold to the head; tepid water and zinc lotion to the wound; purgatives and low diet. A blister was applied on the tenth day, in consequence of the pulse becoming quick. He was dismissed cured, a month after admission.

W. M'M., falling from a height among some stones, received a wound over the occiput an inch and a half in length. Tepid-water dressing was applied to the wound. On the fifth day erysipelas set in. He was placed in the private ward; the hair was cut short, and the head completely enveloped in cotton wadding. This treatment, combined with the occasional administration of salines, effected a cure in ten days.

P. M'D. was struck by a pewter pot, which had been hurled at him. It inflicted a stellate wound over the left frontal sinus, and caused depression of the outer table. Silver sutures were employed to retain the skin in position. Tepid-water dressing, zinc lotion, salines internally, and leeches behind the ear on the fourth day when the pulse became slow, produced a cure in three weeks.

David C., admitted 23d December. While in a state of intoxication, he fell from the top of a loaded cart, and received a severe wound of the scalp. The incision extended from the left frontal eminence to the middle of the occiput. The scalp was detached from its connexions, and turned down over the ear, leaving a considerable surface of bone exposed. A stream of tepid water was directed over the wound, to wash away the mud and filth. The edges were then brought into accurate apposition by silver sutures; the head was shaved, the bowels freely opened, and low diet enforced. Although this patient was an old soldier and an habitual drunkard, he recovered without an unfavourable symptom.

Mrs C., aged 60, fell down a flight of stairs, and was picked up insensible. On admission, she was comatose; the pupils dilated; the breathing slow and stertorous; the pulse 30. Cold was ordered to be applied to the head; an enema was administered; and a drop of croton oil was given by the mouth. The patient remained insensible for three days. After this date there was a gradual, though only partial, return of her senses, and she has remained permanently imbecile. The pulse never rose above 50.

G. B., a young, stout, and healthy cabman, was admitted on the 29th January. When standing on the pavement of the High Street, a brick fell from the roof of a house, and inflicted a very severe compound comminuted fracture of the cranium. By the injury he was rendered a little giddy, but not insensible. On admission, the general symptoms were far from being alarming; the pulse was 72, and natural; the pupils equal and contractile; the skin warm; and the respiration normal. The fracture was situated over the posterior extremity of the sagittal suture, and extended about an inch transversely and longitudinally. It was accompanied with marked central depression. There had been a slight amount of hæmorrhage, but it had almost entirely ceased. Chloroform was administered, and the incision in the scalp extended. A small fragment of bone, which was completely detached, was removed, and the bone-pliers were introduced through the opening, so as to divide the denuded and depressed pieces, and allow of their being either elevated or withdrawn. The inner plate was found to have been splintered. The smaller fragments were easily taken away; but one large, shelving portion had to be divided by the pliers previous to removal. As this latter spicula had been driven into the longitudinal sinus, a gush of blood followed its withdrawal. The jet was easily checked by the pressure of a finger until the wound was thoroughly searched, and all loose particles removed. A small piece of lint was then placed directly over the wound in the sinus, and above it larger pieces, until the whole space was lightly filled. This sufficed to check the hæmorrhage. The patient was replaced in bed, and iced water kept constantly applied to the head. Next day all the pads were removed, except the one in direct contact with the bloodvessel. In the evening a saline purge was given; and as the pulse had risen from 84 to 100, he was put on small

doses of tartar emetic. On the third day, a small fragment of bone, which pressed directly inwards on the brain, was removed by the pliers. During the third and fourth days, the pulse varied from 80 to 88; the mental faculties were intact; and the general appearance of the patient augured well. On the sixth day, however, he had slight rigors, and the pulse rose to 112. Leeches were placed behind the ears; and on the seventh day the pulse numbered 92. In consequence of the pulse rising to 100 towards evening, a blister was applied between the shoulders. On the morning of the eighth day he wandered, the rigors and sweats were repeated; in the afternoon he became comatose, with paralysis of the left arm and leg, and marked dilatation of the pupils. The coma gradually deepened, and he died on the evening of the ninth day after receipt of the injury. On examination, the bone around the wound was smooth and healthy; but, underneath the dura mater, a diffuse collection of pus covered the right side and base of the brain. A small abscess was found in the posterior lobe. The longitudinal sinus was completely occluded by a large fibrinous clot.

Mrs I. was knocked down and run over by a cab on the evening of the 10th March. She received the following injuries:—a wound over the centre of the occiput, about an inch and a half in length; a severely lacerated wound of the foot, whereby the pad of the heel was thrown forwards; and many bruises over the face and chest. She was delirious, and rambled in a high tone; the pulse numbered 92; the pupils were small, but equal and contractile. The wound of the foot was brought together by silver sutures; the head was partially shaved, and cold applied. The next day the pulse rose to 130; leeches were applied behind the ears. In consequence of her greatly excited manner preventing sleep, she received a draught of morphia on the third day. On the fourth she was more composed, recognised her friends, and for the first time complained of pain in the head. She relapsed into delirium on the fifth day; and as the pulse, which continued quick throughout, became also weak, stimulants were tentatively administered. On the seventh day the prostration increased, the coma deepened, the pupils became dilated and uncontractile, and she sank about 10 P.M. Shortly before death a child about the seventh month was born. On post-mortem examination, a large clot of blood was found covering the posterior surface of the brain, and in the substance of the organ itself there were several patches of effused blood. The occipital bone was split down the centre, but without the slightest displacement being produced.

A. L., aged 27, admitted 30th September, with the following history of his case from Dr Ballantyne of Selkirk:—"The bearer received a kick on the forehead from a horse, which produced a compound comminuted fracture of the cranium. When first seen, he was in a state of deep coma, and two of the fragments were depressed upon the brain. On removing them, the inner table was found to have been splintered into numerous fragments. These were carefully

picked away, so as to avoid injuring the dura mater, which was intact. Some of the more threatening symptoms immediately disappeared, but the unconsciousness remained for several days. The head was shaved, cold water constantly applied, and the bowels freely moved. On the second day he was largely bled and freely purged, in consequence of the pulse becoming more slow and full. Next day the pulse rose. During the succeeding fortnight the consciousness slowly returned; but he was accustomed to have relapses at night, with involuntary micturition. About the end of the first week the dura mater sloughed; thereafter a fungus appeared, and slowly increased, notwithstanding a variety of treatment. At intervals, portions of the fungus have sloughed away, but have been speedily replaced by fresh projections." On admission, the patient had not a single head symptom; the general health and appetite were excellent; the pulse between 70 and 80. A little above the right eyebrow there was a prominent, pulsating tumour, about the size of an ordinary apple. Pressure upon it did not produce any cerebral disturbance. The treatment up to the 9th October consisted of gentle aperients internally, along with red lotion locally applied. At this date the edges of the wound were brought into partial apposition by strips of plaster, and the red lotion was changed for other stimulating applications. Under this treatment the tumour steadily increased; all attempts at forcible repression were stopped on the 28th October, and the lotions alone continued, so as to stimulate the process of cicatrization. From that time the contraction of the skin and the diminution of the growth went on rapidly, and on the 30th of November the space left exposed could be covered by a shilling. On that day he absconded.

J. G. was knocked down a flight of stairs. Falling on his side, the left temple struck against one of the steps, and received a very severe bruise, with great subcutaneous extravasation of blood. He also sustained a fracture, which commenced in the parietal bone and extended through the base of the cranium. The patient was comatose; the pupils dilated and immobile; the pulse slow and weak. There was bleeding from the ears and nostrils. The head was shaved, cold applied, leeches behind the ears, an enema administered, and mustard sinapisms placed on the epigastrium. He only lived twenty-four hours.

Remarks.—Wounds in the scalp are more dangerous than in other regions, from their close proximity to the cranial contents, which may either be involved at the time of the accident or at a future date; also from the unequal vascularity of the scalp-textures leading to the risk of sloughing of the fibrous aponeurosis, if erysipelas supervene. The danger is greatly increased when the bone is exposed and loses its vitality, or when it dies from suppuration occurring beneath the pericranium, thereby depriving the external table of one of its sources of nutrition. The process of inflammation must then take place in the diploe, in order to separate the exfoliation; and from the free anastomosis in this structure, between the meningeal vessels and

those of the scalp, the inflammatory action is apt to spread by direct continuity to the interior of the cranium. This unfavourable result is much more liable to happen when the bone perishes throughout its whole thickness, as there is then a certainty of suppuration between the membranes and the cranium. Small scalp-wounds, like those of W. M'M., W. F., P. M'I., are very difficult to deal with. The patients, not crediting the risk incurred, pursue their usual avocations, and partake of their ordinary indulgences. Many escape; but where the constitution is unhealthy, or the habits intemperate, the penalty is often paid; for after going on favourably during the first eight days, or even three weeks, the wound becomes dry and glistening, the patient's manner more irritable, there is a succession of rigors, the pulse rises and is hard, the eye is brilliant and wild, he wanders, and passes into delirium.

Success in the treatment of scalp-wounds depends greatly on their proper management at first. The wound ought to be carefully cleared of all filth by a stream of tepid water, the hair around it shaved, cold constantly applied to the head, the patient kept quiet in bed, put on low diet, and the bowels freely moved. If the skin has been reflected, as in the case of D. C., it ought to be brought into position by points of silver suture. Sutures have been objected to, as tending to produce great irritation, and the objectors either prefer compress and bandage, or leave nature to bring the parts into their proper site. Bad results will not arise from the use of silver, or even of thread sutures, if they are withdrawn on the first signs of irritation; whereas the employment of a compress and bandage implies the collection of the discharge, the frequent change of the dressing, and the infliction of a considerable amount of daily pain and mental excitement. Again, if the scalp is allowed to hang down, it becomes thickened and everted, the process of contraction is tedious, and the uncovered bone is very liable to exfoliate. D. C. was treated in accordance with the principles above laid down; and although the wound was most extensive, the bone bare, and the patient an old drunkard, he went on most favourably, union taking place by the first intention; there being no head symptoms or exfoliation. If erysipelas occur, as in the case of W. M'M., the patient should be separated from his companions, the head wrapped in wadding, and salines administered.

Among the fractures of the cranium are examples of two of their most serious accompaniments, namely, a wound of the longitudinal sinus, and a true hernia cerebri. In G. B., primary head-symptoms were trifling, while in A. L. they were so serious as to threaten life. In the latter, operative interference was necessary to relieve the urgent symptoms of coma, while in the former it was undertaken with the view of diminishing subsequent risks. The absence of concussion in G. B. is accounted for by the vault of the cranium having been struck by one of the angles of the brick, which, readily penetrating and fracturing the bone, prevented the transmission of shock either inwards or towards the base. To place this patient in

the condition most favourable for recovery, it was essential to remove the denuded and separated fragments, which were certain to die, and by their irritation lead to cerebral inflammation. There was also another reason for immediate interference, on account of the fracture being placed directly over the longitudinal sinus, and the possibility of that vessel being wounded. This supposition proved correct, for a large jet of blood followed the withdrawal of one of the sharp spiculæ which had perforated the coats. The hæmorrhage was easily checked, temporarily by the finger of an assistant, and subsequently by a few graduated pieces of lint placed directly over the wound. Cases of recovery after equally severe injuries are on record; but the dangers to be encountered are numerous. The patient sank on the ninth day under one of the most common sequelæ—acute inflammation of the brain and membranes. In A. L. the usual predisposing cause to *hernia cerebri* was absent; there was no formation of pus in the substance of the brain, increasing its bulk, and forcing the superficial layer through the space where counter-pressure has been destroyed. In this case, the pulsatory movements of the cerebral vessels sufficed to push a small portion of the brain through the point of non-resistance, which was afterwards increased by the super-addition of lymph. Slicing this form of *hernia* would have been unnecessary, dangerous, and insufficient to prevent its recurrence. As it was impossible to obtain an osseous protection, the treatment was directed towards promoting the cicatrization of the skin, which, growing over the tumour, might protect it, and by the pressure of the contracting cicatrix, might lead to absorption of the lymph and diminution of the bulk. These processes were going on most favourably, and the tumour was much diminished in size, and almost completely covered by skin, when the patient absconded. In P. M'D. the depression was situated over the frontal sinus, where the tables are widely apart. As the force with which the pot was thrown was not great, and as the instrument was not pointed, the inner table was considered to be intact. The treatment was similar to that of a scalp-wound. The case of Mrs I. is an instance of an apparently trifling head-injury terminating fatally, and shows that, although the wound is small, the bone covered by periosteum, and not in the least displaced, a very extensive fracture may be present. The symptoms led to the belief that there was a large clot of blood pressing on and irritating the cerebrum, keeping up the general excitement, and leading to further passive hæmorrhage. The usual remedies had no effect in allaying the head-symptoms, and as a state of mental excitement is attended with the greatest danger, an attempt was made to soothe it by the cautious administration of morphia. This drug has been excluded by some surgeons from their list of remedies in head-injuries; but if combined with antimonials, and given in cases similar to that of Mrs I., the benefit to be derived from its use much more than compensates for the disadvantages. Mrs C.'s is a painful example of those chronic changes within the cranium which

occasionally occur, after compression, in a person addicted to stimulants, and end in imbecility. The treatment had little effect. It consisted of repeated blisters, and finally, a seton was inserted in the back of the neck.

TRACHEOTOMY.

1. Ann A., æt. $2\frac{1}{2}$, admitted December 4, suffering from diphtheria, with severe laryngeal symptoms. She had been ailing about a week, but the dyspnœa only became urgent the day previous to admission. As the paroxysms were frequent, and the breathing greatly impeded, the trachea was opened. Immediately after the operation, the patient fell into a quiet sleep. She went on most favourably; the tube was removed on the fifth day, and she breathed freely through the wound. On the eighth day the wound became dry and grey; on the tenth a slough separated. The constitutional symptoms accompanying this attack of sloughing phagedæna were of a very low type. She died on the eleventh day. The local treatment consisted of the application of strong nitric acid, with chloride of soda, and very weak Condry's solution. Stimulants and nourishing food were given, both by the mouth and rectum.

2. Isabella R., æt. $2\frac{1}{2}$; admitted 5th December. Suffering from croup in an advanced stage. Tracheotomy. Two days after the operation, the breathing became impeded; the tube was withdrawn, and several large pieces of false membrane extracted. This was followed by relief. On the following day the dyspnœa returned. The membrane had now extended beyond the reach of forceps, and the patient died asphyxiated.

3. John C., æt. 3; admitted 5th January, labouring under diphtheritic croup, accompanied with extreme dyspnœa. Tracheotomy. Dismissed 30th January. Cured.

4. Duncan M'L., æt. 4; admitted 9th March. Croup. Tracheotomy. Recurrence of the dyspnœa. Died, 12th March. On post-mortem examination the false membrane was found extending along the larger bronchi.

5. David N.; admitted 20th May. Croup. Tracheotomy. Died, 23d May. False membrane found in the bronchi.

6. Alex. F., æt. 3; admitted June 1st, suffering from extreme dyspnœa. Diphtheria. Tracheotomy. After the operation, he had repeated attacks of convulsions, with squinting. Dismissed 30th June. Cured.

7. J. S., æt. $3\frac{1}{2}$; admitted 8th June. Croup. Tracheotomy. Died, 11th June.

8. J. B., æt. $4\frac{1}{2}$; admitted 12th June, with great dyspnœa. The whole of the fauces covered with false membrane bled when touched. Tracheotomy. This patient went on most favourably until the 20th. Symptoms of paralysis of the pharynx and glottis occurred. She was fed by the stomach-pump twice daily, and by enemata. The prostration, however, increased, and she died on the 26th June.

9. William J., æt. 38; admitted 14th May, suffering from a paroxysm of intense dyspnœa, with which he had been seized, while on his way to the surgical hospital. He was under Mr Spence's care about a month previously on account of syphilitic ulceration of the larynx, which improved under local and constitutional treatment. He left the wards, promising to return whenever the dyspnœa recurred. Two days previous to admission, he had several attacks, but on the 14th they were worse than he had ever previously felt. As the patient was in a most dangerous state, and the disease evidently advancing, tracheotomy was immediately performed. After the operation, he had not an unfavourable symptom. Dismissed 30th June, still wearing the tube, which did not cause him the slightest inconvenience; when he closed it with the finger, he could speak more distinctly than he had done for months previous.¹

Remarks.—Although the results of this operation have not been so successful as in former years, they still tend to confirm the opinions expressed of it in preceding reports. All the patients who were operated on for croup or diphtheria had been subjected to the usual medical treatment, previous to their admission into hospital. The diseases had, nevertheless, advanced to the last stages; the symptoms were increasing in severity, and the almost certain result would have been death within a few hours. Two were rescued from this fatal termination; life was prolonged in all, and death rendered more easy. In A. F., the false membrane formed below the tracheal opening, and led to such serious dyspnœa, that the tube had to be withdrawn, and the trachea cleared of the deposit as thoroughly as possible. The patient was a very stout, healthy child, and was able after the second day to cough up the membrane through the tube. He was repeatedly placed in a hot bath, on account of several attacks of spasmodic dyspnœa; great relief was experienced, and he slept quietly for hours afterwards. As a certain amount of thickening continued in the air-passages beyond the usual period, the tube could not be completely dispensed with until the beginning of the third week. John C. was, likewise, a stout healthy child; he had not a single unfavourable symptom after the operation.

Although the primary effects of diphtheria are completely cured by the operation, the patient may perish from one of the sequelæ. There are examples of death from this cause in Ann A., and J. B. The first died of hospital gangrene, which attacked the wound eight days after the operation. The second died of asthenia, produced by inability to swallow, in consequence of paralysis of the muscles of the palate, pharynx, and epiglottis, which allowed the food to pass down the trachea, from whence it was coughed up through the tracheotomy tube. I. R., D. M'L., and D. N., perished

¹ In addition to the above cases of tracheotomy, three cases, accompanied by urgent dyspnœa, were operated on by the resident surgeon. All died.

asphyxiated, from the false membrane spreading down and occluding the bronchi. J. S. was a very weak, unhealthy child; she breathed freely up to the last, and died of exhaustion. Had it not been for the great relief experienced from the use of steam-inhalation, iodide of potassium and tonics, the operation would have been performed on W. J. at an earlier date, so as to have guarded against the risk of a sudden paroxysm of dyspnoea. When the diseased parts were set at rest, the ulcers healed up, and the distinctness of the articulation was wonderfully improved.

AMPUTATIONS.

PRIMARY AMPUTATIONS.

Shoulder-Joint.

1. J. C. was admitted in a state of great prostration, due to a severely compound comminuted fracture of the humerus, with the limb almost severed from the trunk; a dislocation of the right hip; and a very severe wound of the dorsum of the foot. As the chief laceration of the tissues was on the inner surface of the arm, amputation was performed by a long antero-posterior flap cut from without. Died twelve hours after admission.

2. John L., æt. 66. Compound comminuted fracture of the arm and fore-arm, the result of a railway injury. The patient had come from a distance, and had lost a large quantity of blood. Amputation by a long external, and a short internal flap cut from without. He sank next day.

Arm.

1. John R., æt. 12, was admitted with a compound comminuted fracture of the fore-arm, great laceration of the soft parts, and an opening into the elbow-joint. Amputation was performed a little above the elbow by a long external flap. In consequence of the bone being stripped of its periosteum, it was necessary to continue the dissection up to the middle of the humerus, where the membrane seemed to be adherent. This patient, who laboured under aortic and mitral disease, was for three days in a state of delirium, and very prostrate. He slowly rallied, and the stump healed, with the exception of a small point near the centre, through which the lateral surfaces of the bone could be felt bare. Two months after admission, the cicatrix was partially laid open, and the sequestrum removed by means of necrosis forceps. It comprehended the whole shaft as high up as the surgical neck of the humerus. Thereafter the wound united completely. A shell of bone was left of sufficient firmness to maintain the shape of the stump; this has been subsequently strengthened, and now feels perfectly strong.

Fore-arm.

Thomas C., æt. 18, had his hand and the lower part of the fore-arm severely crushed, lacerated, and fractured, between pinion-wheels. Amputation by double flap through the middle of the fore-arm. Recovered.

Wrist.

Thomas C., æt. 14, admitted with a lacerated wound of the hand, opening into the carpo-metacarpal articulation. Amputation was performed through the wrist-joint, by two semilunar flaps cut from without, the extremities of the incisions terminating a little below the apices of the styloid processes. The wound healed rapidly. The power of pronation and supination was unimpaired. The stump continues excellent.

Thigh.

Wm. G., æt. 30, was knocked down by a railway-waggon, which passed over both his lower limbs. The right thigh was fractured in the lower third; the soft parts were considerably bruised, and there was enormous swelling from extravasation of blood into the textures of the limb. The leg was cold; no pulsation could be felt in the tibial vessels. The left leg and thigh were likewise much bruised and slightly lacerated. Amputation was performed through the upper third of the right thigh, by anterior and posterior flaps. A portion of the muscle in the stump sloughed; the ulceration extended towards the femoral artery, and on the 9th day opened into that vessel a little above the ligature, which remained attached. On raising the stump and applying cold, the hæmorrhage ceased; but it recurred six hours thereafter. Mr Spence then cleared the vessel from the surrounding tissues, and applied a ligature above the bleeding point. The sloughs separated; the wound looked healthy, and partial adhesion occurred; but matter formed extensively in the left thigh and leg, and, under this profuse discharge, the patient sank in the fourth week.

2. John B. A loaded waggon passed obliquely over his right thigh, fractured the external malleolus and astragalus, and caused great extravasation into the textures of the leg and foot. At first it was thought possible to save the limb, but by the following day it had become quite cold and perfectly numb. As it was impossible under these circumstances to amputate with safety below the knee, the operation was performed through the lower third of the thigh by the long anterior flap. Recovered.

Leg.

1. J. M'C., æt. 33. Compound comminuted fracture of the leg communicating with the ankle-joint, resulting from a railway-truck having passed over the limb. Amputation below the knee by long internal, lateral, and short external flaps, cut from without inwards. There was not the slightest tendency to the projection of the margin of the tibia; the recovery was rapid and complete.

2. C. C., æt. 73, was knocked down and run over by a loaded van. The chief injury sustained was a compound fracture of the leg, for which amputation below the knee was performed by the long posterior flap cut from without. She had been a habitual

drunkard for years, and was intoxicated at the time she sustained the injury. The wound remained in a very inactive state, the discharge being thin and serous. She died on the sixteenth day after admission.

3. J. M., æt. 25. Compound comminuted fracture of leg and ankle, resulting from a railway-waggon passing over the limb. Amputation by a long posterior flap. Recovered.

SECONDARY AMPUTATIONS FOR INJURIES.

Arm.

G. G., æt. 17. While leading a horse by the bridle the animal seized the fore-arm, and inflicted a compound comminuted fracture. He was under treatment for ten days previous to being sent to hospital. Conservative measures were tried, and a fortnight after admission, several pieces of bone were removed. Under the prolonged discharge from the wound, and from the ulcers which had formed over the sharp prominences of the condyles, his general health became impaired. The inflammatory action extended towards the wrist, and in the fourth week suppuration occurred within the joint. Under such circumstances, there could be no hesitation in removing the limb. The operation was performed below the middle of the arm by a long external and short internal flaps formed by transfixion. Recovered.

Thigh.

1. M. J., æt. 16, while running from a ram, tripped, and fell. Her right limb lay across a narrow drain, and against it the chief violence of the animal was directed. The butting against the knee was so severe as to separate the external condyle, and at the same time cause great distortion of the joint and extravasation of blood into the surrounding textures. At first the knee-joint was thought to be dislocated, and attempts were made to reduce it. She was sent into hospital next day. The limb was placed in a wire splint, and fomentations applied to the joint. For about three weeks the patient went on favourably, but the soft parts began to slough, and the joint was ultimately opened into. Thereafter, acute synovitis set in, accompanied with irritative fever and profuse unhealthy discharge. In the beginning of the fifth week, the symptoms assumed a hectic character. As the patient was evidently fast sinking, and as her only chance of life was amputation, the limb was removed by the modified circular method, through the middle of the thigh. She died a fortnight after the operation.

2. W. R. fell into a boiler in which food for cattle was being prepared. Both legs were severely scalded, especially the right. As it was not certain to what depth the textures were affected, the limbs were enveloped in cotton wadding, and afterwards hot fomentations applied. Sloughs separated, involving the greater part of the skin covering the posterior surface of the right leg and the lower

part of the thigh. It was impossible for such an extensive surface to heal, and as the boy was sinking under the discharge, the thigh was amputated above the middle, by double flap, three weeks after the accident. Died of pyæmia.

Leg.

William D., æt. 11. Five days previous to admission, an empty railway-truck passed over the lower part of the left leg and ankle, crushing the limb severely. The chief part of the soft textures over both lateral surfaces of the ankle-joint was evidently destroyed; the sloughs separated on the third day, and the tibio-tarsal joint was laid bare. On the ninth day the fever having assumed the hectic character, the limb was amputated below the knee by a long posterior flap. He went on favourably for six days, but at the end of that time the feverish symptoms returned, accompanied with pain, tenderness, and swelling of the abdomen. A few days subsequently the glands of the neck enlarged, the vomiting and headache became intense; he gradually passed into a state of delirium, and died comatose in the third week after the operation.

SECONDARY AMPUTATIONS FOR DISEASE.

Arm.

J. M'G., æt. 25. Both surfaces of the fore-arm and the internal surface of the arm were severely burnt in childhood. By the cicatrization the elbow was forcibly flexed, and the limb became a useless appendage. A few years ago the skin over the olecranon process gave way; the ulceration extended for a considerable distance, and assumed a cancrioid appearance. She suffered great pain, and her general health was giving way. There were no glandular enlargements in the axilla. Amputation was performed close below the surgical neck of the humerus by a long external flap and very short internal. Recovered.

Fore-arm.

Mrs D., æt. 45, had suffered for several months from disease of the wrist, but it was within the last few weeks that the joint opened and sinuses formed, which led down to carious bone. Her health was considerably impaired by the pain and discharge. Amputation through the middle of the fore-arm, by double flap formed by transfixion. The greater part of the wound healed readily; but in the third week she had a succession of rigors which were followed by the usual symptoms of pyæmia, and of this she died in the fifth week after the operation.

Thigh.

1. J. A., æt. 19, admitted December 22d, on account of a tumour on the inner aspect of the lower third of the thigh. Shooting pains and weakness in the limb had directed his attention to it in July, but at that date the enlargement was very slight. After-

wards, however, it increased rapidly, and soon became the size of a small cocoa-nut. The tumour was ill-defined and fixed, with a semi-fluctuating feeling, and the veins over its surface were distended. There were no enlarged glands in the groin. The patient pale, cachectic, had been losing flesh, and had a rapid pulse. Amputation was performed below the trochanters by nearly equal flaps. Died of pyæmia.

2. J. S. Caries of the tibia. Sinus leading into the knee-joint. Amputation at the lower third of the thigh, by the long anterior flap. Recovered.

3. J. B., æt. 5. Gelatinous degeneration of the synovial membrane of the knee-joint, going on to suppuration. Joint opened. Profuse discharge. Hectic. The patient was emaciated to the last degree, and fast sinking. Amputation by the long anterior flap. After the operation he daily gained flesh, and in the course of six weeks became a lively spirited child.

4. C. Cl., æt. 10. Six years ago she suffered from necrosis of the femur, and several pieces of bone were removed. As the disease communicated with the joint, and the position of the limb was neglected, it became flexed at a right angle. After admission she had an attack of scarlatina. On her recovery, the limb was amputated in the lower third of the femur, by the long anterior flap. The stump was healing rapidly, when, in the second week, she had an attack of acute nephritis, followed by uræmia, which soon proved fatal.

5. J. S., æt. 13, admitted on account of a large strumous sloughing ulcer, involving almost the whole posterior surface of the leg. Cicatrices in the neck. Phthisical signs in both pulmonary apices. Under constitutional treatment her general health improved,—the ulcer assumed a more healthy appearance, and partially cicatrized; but after walking a little, on two successive days, the whole of the newly-formed tissue sloughed. She suffered intense pain; the discharge was profuse, and she was evidently fast sinking. As the only chance of recovery depended on amputation, the limb was removed by the long anterior flap. Rigors occurred on the eighth day; she became jaundiced, and died on the eleventh day after the operation.

6. M. L. Gelatinous disease of the knee-joint, of eight years' duration, ending in ulceration of the cartilages, and caries; limb flexed; sinuses into the joint; profuse discharge. Amputation through the lower third of the thigh, by the long anterior flap. Recovered.

7. J. W., æt. 12. Necrosis of the whole shaft of the tibia, accompanied with a profuse fetid discharge, which escaped through several orifices. Ankle-joint ankylosed in an extended position. Patient very much emaciated, and extremely weak. Amputation through lower third of the thigh, by the long anterior flap. Although the stump, externally, looked perfectly healthy, acute

necrosis had attacked the shaft of the femur, and on the fifth day a large subperiosteal vessel was opened into. The poor boy, mistaking the hæmorrhage from this source for the purulent discharge, gave no notice of the occurrence, and it was only in consequence of his becoming blanched and faint that the resident surgeon was sent for. The stump was laid open and the vessel seized hold of, but, on attempting to tie it, it gave way and retracted. The stump was then raised, cold applied, the patient carefully watched, and stimulants largely given. He was too weak to bear up against the loss of blood, and sank the next day.

8. C. Cn., æt. 25, had suffered for eight years from strumous disease of the knee-joint, with ulceration of the cartilages and necrosis of the lower end of the femur. The pain had become so intense as to compel her to seek relief in large doses of laudanum. She was very much emaciated, and excessively weak. Amputation by the long anterior flap. Secondary hæmorrhage from the femoral artery occurred on the eighth day; the alarm was immediately given, and Mr Spence, who was in the wards at the time, secured the vessel. During the succeeding fortnight the stump healed rapidly, and the wound was almost completely united, when rigors set in; these were followed by the usual symptoms of pyæmia, which proved fatal in the fifth week after the operation.

Leg.

1. R. A., æt. 43. Large callous ulcer, involving nearly half the internal surface of the leg. The patient had been subjected to a great variety of treatment, ending in temporary relief. As it was impossible to obtain a sufficiently long posterior flap, it was necessary to cut a short anterior flap from the front of the leg. The wound healed readily, and the patient never had an unfavourable symptom after the operation.

2. A. A., æt. 50. Six years ago he sustained a compound fracture of the lower end of the tibia, communicating with the ankle-joint. After prolonged treatment, the parts united; but he was never able to make much use of the limb. Pieces of bone had been repeatedly removed. Acute inflammation lately attacked the joint, and ended in caries. From the various sinuses there was a profuse discharge, under which his general health was rapidly giving way. Amputation below the knee by a long posterior flap. Recovered.

Ankle.

1. R. H. Strumous disease of the ankle, ending in caries and ulceration of the cartilages. Ordinary amputation. Recovered.

2. J. M. Caries of tarsus. Large ulcer over the outer surface of the os calcis. Under these circumstances, it was necessary to perform amputation by an internal lateral flap. Recovered.

3. G. M. Caries of tarsus, with sinuses. Ordinary amputation. Recovered.

4. J. H. Strumous disease of the tarsus. Abscess in the interior of the os calcis. Ordinary amputation. Cured.

Remarks.—There were thirteen amputations for injury; of these nine were primary and four secondary. Four of the first class died, and five lived. The causes leading to death were different in each instance. Primary amputation at the shoulder-joint is one of the most successful of the major operations. If a fatal result speedily follows its performance, as in the present cases, it will be found to depend on unavoidable causes, such as the complex nature of the injuries, hæmorrhage, etc. One died from the severe shock arising from the crushed arm, the dislocated hip, and the lacerated foot; the other, an old man, perished from the effects of the loss of a large quantity of blood previous to admission. A third patient died on the sixteenth day after amputation below the knee. She was a dissipated old woman, and at an early date was attacked with delirium tremens. The fourth is of more interest, both with respect to the nature of the chief injury and the results following on amputation. The fracture was similar to that which is produced by a spent cannon-ball striking the limb, the bone being shattered; the muscles and vessels reduced to a pulp; the skin, through its superior toughness and elasticity, unwounded, but its vitality completely destroyed. The amputation was performed by skin-flaps, above the middle of the thigh, where the textures appeared sound. Very little muscle was retained, because it is impossible to define exactly the extent to which the subcutaneous textures have been destroyed, and the risks of pyæmia are greatly increased by having a large suppurating surface. The whole, however, of what was necessarily kept to cover the bone sloughed, and the femoral artery, lying amidst the diseased mass, was opened into fully an inch and a half above the ligature, which remained firmly attached to the vessel. By the time the hæmorrhage occurred, the limit of the sloughing had been defined, and as it did not extend high up amid the muscles, the artery was cleared and tied in the stump, at a considerable distance above the ulcerated opening. After this the sloughs separated, and the stump was healing favourably, when the bruises in the left limb suppurated, and the patient sank under the profuse discharge. On carefully dissecting the amputated thigh, an enormous extravasation of blood was found to have escaped from the popliteal vein, which had been perforated by one of the fragments, at the lower margin of Hunter's canal. The absence of pulsation in the tibials depended on the complete division and retraction of the internal and middle coats of the superficial femoral artery, which stopped the circulation as thoroughly as if the vessel had been ruptured. Doubts have been expressed by writers on surgery as to the propriety of performing amputation through the wrist-joint, on account of the tendency to exfoliation of the cartilages, and sloughing of the tendons. To

avoid the former danger, it has been proposed to saw off the ends of the bones ; but if this rule were followed, one of the advantages of the operation would be lost, since ankylosis would be certain to occur in the radio-ulnar articulation. The rapid recovery, and the small amount of discharge in T. C., tend to negative these objections. When the patient was seen six months after dismissal, the stump was excellent, and the movements of pronation and supination complete. Mr Spence, in the case of J. M'C., took the flap from the internal aspect of the leg, in order to avoid the pressure of the crest of the tibia, and ulceration of the anterior flap. The result was perfectly satisfactory, both with respect to the entire absence of irritation and the usefulness of the stump ; but it was in no way superior to the long posterior flap treated *on its side* in a flexed position. Out of the four secondary amputations for injury, three died after prolonged attempts to save the limbs. In both Wm. D. and M. J., the textures were severely injured ; in the former, the destruction was immediate and complete ; in the latter, the muscles were chiefly affected, and the skin only gave way after the occurrence of acute necrosis and suppuration. The operation would have been performed on M. J. at a much earlier period, but her parents withheld their consent until she was *in extremis*, and the chance of recovery almost gone. When acute necrosis sets in after injury, as in her case, and the progress of events necessitates amputation, there is always great risk of death from pyæmia. In this instance, however, pyæmia had probably begun previous to the operation. She died of the more fully developed symptoms a fortnight afterwards. Amputation for burns, as in the case of W. R., where the patient has not recovered from the effects of the injury, and is suffering from irritative fever, is also often followed by pyæmia ; whereas amputation for the secondary result of burns, as in J. M'G., is generally very successful.

There were sixteen secondary amputations for disease, and of these six died. This mortality, which exceeds that of any former year, arose from the nature of the previous maladies, the unhealthy state of the season, and the prevalence of pyæmia. In J. A. it was necessary to saw through a bone, the lower part of which was the seat of a malignant tumour. Such an operation is always attended with great risk to life. This is partly due to the necessity in most of these cases of approaching close to the trunk, and thus producing a great amount of shock in a vitiated system. Amputation through the shaft of a bone affected with necrosis, as in C. Cn., C. Cl., or for acute necrosis, as in J. W., is much more dangerous than for strumous diseases of joints, or cario-necrosis of the bone, on the distal side of the joint, as in J. S. The patients in these cases, being predisposed to affections of the osseous system, acute necrosis is very apt to attack the stump and prove fatal, either by laying open a subperiosteal vessel, as in J. W., or more commonly by leading to pyæmia. The two instances of secondary

hæmorrhage differed widely as to their pathology. One occurred in an unhealthy female, and was due to the setting in of pyæmia preventing the proper plastic changes, or breaking up those which had already begun. In the other case, the hæmorrhage proceeded from a subperiosteal vessel; and as the stream of blood was small, it nearly proved fatal before attracting the patient's attention. In the former, the femoral artery was tied in the stump as high up as possible; in the latter, an attempt was made to seize the bleeding point, but failed; the elevation of the stump, however, and the application of cold, sufficed to check the hæmorrhage. The febrile attack in C. Cn. seemed at first to resemble scarlatina; its subsequent course rendering this opinion doubtful, and the health of the patient being apparently restored, the operation was performed. A tendency to renal affection was still present; and, within a few days, acute nephritis set in, followed by pyæmia.

PRIMARY EXCISION OF JOINTS.

Elbow-Joint.

H. C., æt. 21, fell from the roof of a house four storeys high, and sustained a compound comminuted fracture of the lower end of the right humerus opening into the elbow-joint, a compound fracture of the right femur, and several bruises about the head and trunk. When the shock had partially disappeared, a single longitudinal incision was carried along the back of the elbow-joint; the loose fragments were removed, the end of the humerus rounded off, and the heads of the radius and ulna sawn across. The patient, who was of intemperate habits, and by no means strong, gradually sank and died on the fourth day, without ever having been fully conscious after the accident.

Knee-Joint.

R. K., æt. 34, jumped out of a railway train as it was leaving the station. He fell on the left knee, and his head and shoulder struck against a stone wall. On admission, he was found to have sustained several bruises about the head, a dislocation of the left shoulder into the axilla, and a slightly lacerated wound over the anterior surface of the lower end of the femur. Through the wound, which extended about two inches transversely, the finger could be passed into the knee-joint, and a piece of the outer condyle could be felt detached. The extremities of the incision were prolonged in a semilunar manner, so as to form a large flap, which was turned down. The ends of the bones were cleared and sawn off. No vessel required ligature. The limb was placed in a straight M^cIntyre splint, with a well-padded Gouche's splint behind the joint. For a few days the patient was very low and prostrate; but he rallied, and went on without a bad symptom for four weeks, during which time almost the whole incision healed, and the discharge was reduced to a minimum, which escaped from the most

dependent point of the internal horn of the wound. About the beginning of the fifth week the splint was changed, and as the patient was very restless, the limb was unavoidably moved; two days thereafter the pulse rose, rigors and sweats followed, he became jaundiced, delirious, and died six weeks after the operation.

SECONDARY.

Knee-Joint.

M. B., æt. 21, admitted on account of ulceration of the cartilages, along with caries of the lower articular end of the femur. The disease had been present for years, but she had only been for a few months confined to bed. Several different forms of treatment were tried without any beneficial effect. Excision was performed by a semilunar incision. A small part of the patella was diseased; it was scooped out, and the bone retained. The limb was placed in a Ferguson's splint. With the exception of the extreme ends, the whole of the incision united by the first intention. Firm ankylosis took place between the bones, and three months after the operation she could stand and walk unsupported. To ensure safety, however, she was kept at rest for a longer period before being dismissed. Cured.

Shoulder-Joint.

1. J. R., æt. 30, was placed under Mr Spence's care about a year ago, on account of caries of the head of the humerus. He was greatly benefited by the application of the actual cautery, and returned home. A few months thereafter the disease recommenced, but he disregarded it, until the severe pain, the disturbance of his rest, and the breaking up of his general health, compelled him to seek surgical advice. On admission the emaciation was marked, the night sweats profuse, and the discharge abundant from two sinuses which communicated with the joint. Under the clavicle there were the physical signs of phthisis in its first stage. When he had improved a little, the head of the bone was removed by a single longitudinal incision, commencing a little below the acromion process, so as to include the sinuses in front. By freely enlarging the sinus on the posterior aspect of the joint, a dependent opening was formed, to allow the escape of the discharge. The operation was almost immediately followed by a marked general improvement, and in the course of two months he was much stronger than he had been for the two preceding years. The wound healed readily; the new joint became tolerably firm, but permitted of quite sufficient motion to allow the hand an extensive range of movement.

2. R. C., æt. 34, suffered from disease of the shoulder-joint for three years. The pain had for some time disappeared; he only complained of the profuse discharge, and of its affecting his general health. Strong, dense adhesions had formed between the neck of the humerus and the surrounding tissues, greatly impeding even

the passive movements of the joint. The coracoid process was enlarged and elongated. The only peculiarity in the operation was the great difficulty in projecting the head of the bone sufficiently to allow of the application of the saw; but the strong adhesions which prevented this being done were afterwards of great service in strengthening the joint. The wound healed readily, although the patient was very liable to spreading erythema, and had two attacks during his convalescence. Dismissed cured.

Elbow-Joint.

1. A. G., æt. 16. Caries of the lower end of the humerus, of four months' duration. Abscess of the joint. Excision by a single longitudinal incision. Cured.

2. E. C., æt. 8. Strumous disease of the elbow-joint, of several years' duration. Humerus unhealthy; sinuses leading into the joint. Excision by a single longitudinal incision. Cured.

3. J. D., æt. 6. An exceedingly strumous child, who had suffered for a long time from scrofulous disease of the elbow-joint. Excision by a single longitudinal incision. Cured.

4. R. A., æt. 23. Anchylosis of the elbow-joint in the extended position, the result of caries succeeding injury. Excision by a single longitudinal incision. Cured.

5. J. T., æt. 16. Strumous disease of the elbow-joint, of several months' duration, causing great pain, and affecting her general health. Phthisis in an advanced stage. Excision by the H incision. After the removal of this source of irritation, she became remarkably strong. Cured.

Remarks.—There were two cases of primary excision of joints—one of the knee, the other of the elbow. Both died, the former of pyæmia, five weeks after the operation; the latter of shock, four days after admission. In the treatment of a large wound in the knee-joint, accompanied with the detachment of a piece of the condyle, the choice in adults lies between amputation and excision. The only mode in which a cure can be effected is by destruction of the cartilages and anchylosis of the bones. Nature would bring the articular surfaces into the proper state for osseous union, by setting up acute inflammation within the joint, attended with great constitutional disturbance and exfoliation of the cartilages. But when the ends of the bones are removed, the limb is in the same state as after a compound fracture, and the risks to life are similar. Excision is preferable to amputation, as it produces a less amount of general shock, is less frequently followed by pyæmia, and yields a much more satisfactory result. In R. K. the injury was well adapted for excision, as the leg and upper part of the thigh were intact, and the wound only required the extremities to be prolonged in a semilunar manner, in order to give ready access to the joint. The patient was also comparatively young, temperate, and

strong. He went on most favourably until after the shifting of the splint in the fourth week, when the limb was unavoidably moved; this was followed by acute inflammation of the bones and pyæmia.

The fatal result in H. C. need scarcely be wondered at; it had nothing to do with the operation, but was entirely due to the shock of the many severe injuries.

M. B. was a favourable case for excision, inasmuch as she had ceased to grow, was in fair health, and was affected with limited caries of the joint. Only a small piece of the cartilage of the patella was diseased; this portion was scraped away and the rest of the bone retained, so as to give greater firmness to the ankylosed bones. She went on most favourably, and can now walk on the limb. When advanced disorder of the joint is associated with phthisis, as in J. R., we must discriminate how far the general symptoms depend on either disease; and if they are chiefly due to the former, excision, or even amputation, may be unhesitatingly performed, and they will often be followed by as marked an improvement as took place in this instance. The irritation within the joint in R. C. had led to great thickening of the ligamentous textures, and the deposition of osseous matter around the joint, especially on the coracoid process, which was greatly enlarged and elongated. From this state of the surrounding tissues, considerable difficulty was experienced in projecting the head of the bone sufficiently to permit of the application of the saw. The patient made a rapid cure; the adhesions insured a firm basis for the movements of the joint, and rendered the arm so powerful, that shortly after dismissal he engaged in breaking stones.

Out of the six cases of excision of the elbow-joint, five were done by the single longitudinal incision, and in none of these was there any difficulty in the performance of the operation. Although in two of the cases erysipelas attacked the wound, and the union was altogether by the second intention, the joint was finally as perfect as in the others, and the cure little prolonged. In these no complex bandaging was required to keep the edges of the wound in apposition, as is necessary when the H incision fails to heal by the first intention; the limbs were simply laid on pillows in a semiflexed position, so as to permit of the easy application of fomentations.

In all the cases, passive motion was begun at an early period, and the patients within two months could move the joints in a very perfect manner, and lift light weights.

(To be continued.)

ARTICLE II.—*Some Observations on Medical Education.* By ANDREW WOOD, M.D., F.R.S.E., F.R.C.S.E., Member of the General Medical Council.

THE subject of Medical Education which was so largely discussed during that thirty years' war for Medical Reform, which found a truce rather than a termination in the passing of the Medical Act of 1858, has been again brought prominently before the public by Professor Syme. In the paper which he read at a recent conversazione at the Royal College of Surgeons of Edinburgh, and which he has since published with additions in the form of a pamphlet, he brought under review the present system of medical teaching and examination. This he most unsparingly censured as redundant, irritating, and unprofitable to students—not sufficiently practical, and ill-calculated to supply the public with good and well-trained practitioners. The very high position which Professor Syme occupies in the profession, and his long experience as a teacher, extending, as he states, over a term of no less than forty years, obviously entitle any remarks of his on the subjects indicated, to respectful attention and deliberate consideration. There is, in fact, less risk of his failing to receive such, than of the magic of his name leading to the too hasty and indiscriminate approval and adoption of suggestions which contain, doubtless, much that is valuable, but contain also, as appears to me, not a little that, with the appearance of simplicity and practicability, is really impracticable, or, if practicable, not desirable. We must not, because there are defects in our present system, come to the unjustifiable conclusion, that, in respect to it, "all is barren;" that the labours of those zealous and intelligent men who, for many a long year, devoted themselves to the laudable task of endeavouring to elevate the medical profession, have been labours in vain; that nothing, or less than nothing, as those who have not attended to the subject might possibly infer from the tenor of Professor Syme's remarks, has been achieved for the cause of medical progress; that we have been, in fact, sailing, as it were, on a wrong tack, and must now veer altogether round; that the tendency of much of what has been done is in no small measure to deteriorate instead of to improve the quality of medical men; and, in fine, that not gradual and moderate reform, but a sudden and complete revolution in our notions as to medical teaching and examination is now loudly called for.

Before endorsing a view of the state of matters so unfavourable as this, it is right that we should inquire how facts really stand. If I mistake not, the result of such an inquiry made without prejudice will be to demonstrate that, whether in spite of the system which has obtained of late years, and to which so much objection is made, or, whether in consequence of it in large measure, as I am inclined to believe, medical men as a class are vastly improved in almost

every respect from what they were less than half a century, ay, or a quarter of a century ago; that they are more literate, as becomes the members of a learned profession; that the practice of the healing art in its various branches of hygiene, medicine, surgery, and midwifery, has been rendered more simple, less bloody, less druggy, less meddlesome, and more successful; that we now-a-days know better, not only how to discover and distinguish disease in its various phases, but how to treat it; that we have discarded for the most part those farragos with which previous generations of practitioners delighted to puzzle themselves and their patients alike, a change no less palatable than beneficial to the patients; that the remedies of the present day are less numerous, less nauseous, less severe, less indiscriminately applied than formerly; that our faith in the *vis medicatrix nature* has increased in wholesome proportion to the decline in our confidence in the powers of wholesale bleeding and drugging; that our surgical armamentarium is much less complicated, much less formidable, and, being wielded by better instructed hands, is far more efficient than it used to be; and, in short, that medicine and medical men, whether in town or country, despite of abounding quackery and its legion of dupes, are more worthy of that public confidence of which the *isms* and the *athies* would attempt to deprive them, than in times gone by.

These things I mention, not as reasons for declining to look into the important subjects of medical education and examination, with a view to their progressive improvement, whether by supplying proved defects, or by lopping off proved redundancies, but in order to bespeak caution in the application of the amputating knife, even when wielded by the hands of a master of his art, lest, peradventure, the operation of removing diseased or redundant, and, consequently, useless or hurtful parts, should infer the injurious sacrifice of not a little of that which is sound and useful, if not indispensable to the vitality of the profession. We all know what the conservative surgery of our day has done in the way of obviating operations which were formerly the opprobria of surgery, and in the way of saving parts which, in less conservative days, were wont to be needlessly sacrificed; let us apply the same principles to the reform of our system of medical teaching and examination, going forward indeed, but forward in the spirit of cautious conservatism, and not of rash radicalism. It is right, at all events, that the subject should be fully ventilated in the press and amongst the members of the profession, as, indeed, it has been in large measure already, before it occupies, as it doubtless will, the attention of the Medical Council at their approaching meeting.

It is quite obvious that no man should be licensed to practise medicine unless he has been adequately taught by competent teachers, and adequately tested by competent examining boards; the safety of the public no less than the honour and credit of the medical profession require this. This can only be properly secured by en-

forced curricula of study, and examinations conducted by qualified boards. To ensure as far as possible efficiency as well as uniformity of education and of testing on the part of the licensing bodies, which, by the way, are far too numerous, and ought to be concentrated, the Medical Council, under the Medical Act, have been invested with the power of establishing and of enforcing a minimum curriculum of study and a minimum system of examination. Unless they exercise this power, they abnegate what is in fact their chief and most important function, and the profession must suffer. Some, erroneously as I think, deny this power to the Medical Council. If they do not possess such a power, I can only say that, in my opinion, the Medical Act is to a great extent a dead letter, "a mockery, a delusion, and a snare," tending rather to foster than to prevent that injurious competition which is apt to spring up amongst the licensing bodies, and which cannot but act prejudicially to the public interest. If such be the case, that Act needs amendment without delay. I, for my part, have little faith in the power of what, in phraseology fashionable in some quarters, is termed "moral suasion." Whilst human nature continues to be what it is, and I know not that corporate human nature differs in this respect from individual human nature, excepting, indeed, that the former being shared by numbers, whilst no less inclined to selfishness, has less feeling of responsibility; whilst human nature, I say, continues to be what it is, statutory enactment is absolutely necessary in order to carry out salutary changes which infer interference with real or supposed corporate interests. Even were the debates of the Medical Council reported for the press, as they certainly ought to be, and as I confidently trust they will ere long be, the "moral suasion" thereby exerted would, I fear, prove inefficacious. As long as these debates are carried on as hitherto in secret, the amount of "moral suasion" or of influence of any kind that the Medical Council can expect to exert must be infinitesimal. Most unquestionably, important changes in reference to medical study and examination ought, before being carried out in action by any of the licensing bodies, to be brought under the notice of the Medical Council, where all interests are represented, to be by them considered and decided on. Especially is such a course necessary where these changes infer reduction of the curriculum of study or diminution of the stringency of the examination. Having premised these few observations as to the regulating powers of the profession under the Medical Act, I proceed to make some remarks on the several subjects of medical tuition and medical examination, and the improvements upon these as at present existing, which seem desirable.

There are various ways in which knowledge may be acquired by the medical student, chiefly these; 1st, Attendance on lectures in recognised medical schools; 2d, Private reading; and, 3d, Practical observation in the dissecting-room, in the hospital, in the dispensary, in the laboratory. Under this last category, we may also

place apprenticeship, which, in Scotland at least, of late years, has been gradually disappearing, though, perhaps, it may be questioned whether apprenticeship when properly conducted might not still be considered a useful adjunct to medical education. Each and all of these methods of learning, lectures, reading, and practical observation, are important, even essential; no one of them can supersede the other, nor ought any one of them to be magnified at the expense of the other. To ascertain the right place, and order, and due proportion of these is the Q. E. D. of the present agitation, and it is a problem which seems hardly to have been solved as yet, and is certainly by no means so simple as might be thought by those who have not attempted its solution. Professor Syme says, that too much lecturing is an evil, one into which, especially of late years, we have run. He is probably right in the main, yet we must take care lest we fall into the opposite extreme of depreciating too much the usefulness of lectures, and of arguing against their use from their abuse. In shunning the depths, we may run some risk of grounding on the shallows. Even when lectures are of excellent quality, clear, concise, logical, and demonstrative, there is, doubtless, a point beyond which they cannot be carried with advantage. Even the most industrious and praiseworthy student who imbibes greedily all that the lecturer tells him, runs a risk of becoming crammed to repletion with excess of mental food beyond his powers of digestion, and may thus, instead of being mentally nourished and growing thereby, become a martyr to mental indigestion. Too much of a good thing, they say, is good for nothing; too many even good lectures may not profit a student any more than sixteen sermons read in the course of one day (and that a Sabbath day) could benefit an esteemed friend of my own, whom I once heard boast with the utmost complacency of such a herculean feat.

But if the mental digestion of the student is liable to be marred by too much *good* food, what must be the case when he is necessitated to imbibe a like quantity of food whose quality is the *reverse of good*. Professor Syme tells us that there have been lecturers in the past who have taught what, in plain language, he terms "nonsense," and that there will be such in the future. Some lecturers set their students to sleep by long elaborate essays, read, it may be, in a monotonous tone, and unrelieved by apt illustration. Others, aiming at the exhaustive, become exhausting. Mistaking the object of lecturing, they seem to think it necessary to include in their prelections everything that has ever been written or said by everybody in every age upon every item of the subject they profess. I can remember (*horresco referens*) the pain I had myself to undergo when a student in listening to the lectures of one who had much learning—who was, in fact, full to the brim on his own subject and on many others beside,—but whose style of giving vent to his vast accumulation of information was so tedious and incoherent as to weary

and perplex his auditors ; the result being an amount of what Lord Derby would call "muddle" difficult to conceive. Other lecturers treat their subject under a multiplicity of complicated, artificial, wiredrawn, even fanciful, divisions, which luckily no student can remember, for if he did, he would, I suspect, prove but an indifferent practitioner. There is another evil under this head which requires notice,—to wit, that the student under one lecturer has often to listen to a mere *rechauffé* of what he has already heard more than once, it may be, under other lecturers ; as, for example, regarding the doctrines of inflammation, which lecturers on surgery treat at great length, which lecturers on physic treat at little less length, and which even the lecturer on physiology may occupy some lectures regarding. This requires amendment. I believe with Mr Syme, that the number of courses at present demanded might with advantage be to some extent reduced, and, still more, that the number of lectures in each course might be considerably diminished, in order to afford the student that time for reading and reflection, and for practical observation, which, in consequence of the large number of lectures at present squeezed into the comparatively short period of professional study, he cannot possibly enjoy.

But whilst we thus war against the abuse of lecturing, let us not be blind to its great utility when duly proportioned and properly conducted. There is a cry in the present day amongst some men that practical observation is the be-all and the end-all of medical education : some even go so far as to maintain that a young man may with advantage commence his education by an apprenticeship quite apart from a medical school, in order that he may have the earliest opportunities of practically observing what, it is clear, he can know nothing about, and what, therefore, he cannot intelligently and profitably observe. They call to their aid the oft-quoted—oft inaptly quoted—Horatian rule—

"Segnius irritant animos demissa per aurem,
Quam quæ sunt oculis subjecta fidelibus, et quæ
Ipse sibi tradit spectator."

Far be it from me to deny the immense importance of practical observation, and the evil of interfering unduly with the golden opportunities for practical observation which the student during his course of study has it in his power to avail himself of under the most able masters,—opportunities which lost then, or neglected then, may never recur. But this I must maintain, that, *per aurem* no less than *per oculum*, much valuable information may be imbibed which cannot in any other way be so well obtained. The power of eloquence is great and universal ; the power of a clear and interesting lecturer in conveying knowledge, and in inspiring his students with the love of it, is undoubted. It is his duty to collect, from various sources inaccessible to the student, important information which he (the student) may have neither time nor opportunity to obtain for himself ; to arrange and condense it ; to

enunciate it in such a manner as may at once interest and instruct the student; to state and discuss the principles upon which scientific practice is founded; to guide the student in weighing opinions regarding controverted points, and to help him to separate the grains of wheat from the bushels of chaff. It is hardly possible to over-estimate the value of tuition such as this in the hands of a competent lecturer,—one who not only knows his subject thoroughly, but has the faculty of teaching it,—qualities which are not always combined in the same person,—and who takes care to aid the words which he addresses to the ear, by illustrations addressed to the eyes, when these are available. Such lecturing is invaluable to the student; it not only serves to guide and give precision to his studies, but it also supplies him with a large quantity of information which he could not so well obtain, if at all, in any other way, and saves him much valuable time and labour. It supplies him with principles whereon to found sound practice; it supplies him with the means of observing practically with advantage, and saves him from that mere empiricism which practical observation, unguided by correct principles, tends to engender.

There are, however, several things which seem essential in order that lecturing may produce all the benefit of which it is capable. One is, that the lecturer should, as recommended by Professor Syme, put into the hands of his students a well-constructed and copious syllabus of his course,—a well-adjusted skeleton, as it were,—which the student may, during the course, from the lips of his teacher, be enabled to fill up and complete, even give life to. Class-examinations, too, I consider absolutely essential. These should be frequent, at least once a-week. They should be written and oral, according to circumstances, and they should have reference not only to the subjects on which the lecturer descants in his lectures, but also to those, for information on which he refers them to specified books. The value of class-examinations can hardly be over-estimated. Yet how long were they neglected. Even now they are by no means so general as they ought to be, and as they will be. I am glad to know that for years they have been adopted by many—I believe most—teachers in the Edinburgh School, as well as in various other schools; and that though hitherto permissive only and not obligatory, they have been taken advantage of by very many of the students, with the best possible results. But I would say emphatically, that they should be made imperative on all teachers and students alike, at least on all students who intend becoming candidates for degrees or licenses. Make attendance on class-examinations imperative, and establish a minimum of proficiency to be ascertained by these examinations, as necessary in order to entitle a student to a certificate of attendance, and you may then, I think, dispense with the irksome system of roll-calling at present in force in some of our schools,—a system demoralizing in many instances to students,—may we not with truth say, in some instances, to teachers also. Enforced attendance on class-examina-

tions would be no hardship to students, but a great boon. It would act as a continuous and wholesome stimulus to work from the very commencement of their course of study; it would thereby save the pockets of students no little expense in the shape of fees for grinding, cramming, or coaching, as at present, before going up for their professional board-examinations, and it would save their nerves much of that apprehension, vulgarly called "funk," which, amidst vain regrets, embitters too frequently the last year of study, and which, by drawing off their attention from important branches of study at a critical part of their course, does away to no small extent with the benefit which the ordeal of examination is intended to confer. Time for these all-important class-examinations can easily and with advantage be found, by reducing the number of lectures. Three, or at most four, lectures a-week on each of several subjects are quite as many as a student can properly listen to, digest, and read up to; nor would more be required under a system where the lecturer, as he ought to do, refers the student to private reading for much that is at present unnecessarily and wearisomely treated of in the lecture-room. The weekly class-examinations would be worth many cancelled lectures. As to the method of conducting these examinations, they may be partly written, partly oral, according to circumstances. Some subjects, as, for example, demonstrative anatomy, practical surgery, etc., do not admit of written, but require oral and demonstrative examinations. Most subjects will probably be best tested by written examinations. The question as to class-examinations being taken in lieu of board-examination I leave for the present, as I shall have something to say regarding it afterwards.

I cannot help thinking that sufficient attention has hardly been paid by lecturers to the important subject of the direction of the student's private reading. That is a subject which should certainly be guided by the counsel of the lecturer. For want of good advice on that head, the reading of students, even the most industrious, is apt to become too often excessive, diffuse, and distracting on the one hand, or on the other shallow and unedifying, especially when it is confined, as it often is, to those superficial manuals of which we have too many in the present day. We should be glad to see the attention of students more directed than it is to those exhaustive monographs or separate treatises on the various important subjects embraced in the curriculum of medical study,—the result of deep thought and experimental research by the great master-minds of the profession. Carefully studied, these not only remain better impressed on the memory, but become highly suggestive, leading the student to thought and reflection calculated to bear excellent fruit in the future.

But, further, in order that lecturing and reading may produce their best effects, it is necessary not only that lectures should be diminished in number, that the subjects of them should be treated in the discriminating way which we have referred to, that they be associated with a judicious but ample syllabus, and a regulated course of reading, and tested, from week to week, by class-

examinations ; but it is no less necessary that the student's attention should not be occupied by too many subjects at the same time. To mix up, for example, anatomy, chemistry, and natural history at the same time, or even more classes equally dissimilar, as some students do, either from compulsion, owing to the present system, or, as in some instances, from erroneous guidance, is obviously perplexing and highly inexpedient. It is, therefore, I hold, absolutely necessary that the system be reformed altogether ; that systematic chemistry, botany, and natural history should be included in the list of preliminary subjects, and that the teaching and testing on these subjects should be taken before the student is allowed to commence his proper medical curriculum. I should rejoice, then, were Professor Syme's suggestion carried out, that the preliminary studies and examinations, including the courses I have mentioned, should be made, as they ought to be, strictly preliminary ; that in order to facilitate this, the age of commencing the medical curriculum be not sooner than eighteen, and that no student shall be henceforth registered as a student of medicine who cannot produce evidence of having completed his preliminary education and examination. The result of this would be every way good. In the first place, these, like other preliminary studies, which are meant to train the mind, and prepare it, as in a gymnasium, for grappling with the labours of the professional curriculum, as well as to communicate to it a store of knowledge calculated to be useful otherwise, to a greater or less extent, would then fulfil their object,—a thing which they cannot do if they are allowed to be taken, *pari passu*, with the medical curriculum, or at least to be completed after that course has been commenced. In the second place, being thus put in their right place, and the student's mind having thus been disembarassed of much of that which at present distracts it and interferes with that attention to his strictly professional studies which their importance demands, he will be able to apply the whole powers of his mind to those studies, and certainly not the less effectively, because of his preliminary training and the large stock of information which he has thereby acquired.

In this place it may not be irrelevant to say a few words as to what should be embraced in the preliminary education of those intended for the medical profession. In our days it is one great feature of educational progress, that entrance is barred against the admission of illiterate men into all professions, whether civil or military. Too long the medical profession, which ought, *par excellence*, to be a learned profession, has been accessible to men of very rude and imperfect education. A man might even become *doctor* though in no measure *doctus* : a very puny test, in the shape of the translation of a passage from some Latin author (and that not even a classical author), was till recently all that used to be required even in some of our Scottish universities. All that is now changed. Already the new regulations of our universities and colleges are acting on the lower schools of the country, and awakening teachers and

scholars to the necessity of a systematic liberal education (in the best sense of the term), in order to admission into the learned professions, including medicine amongst the rest; and ere long the medical profession will, as it ought, include none but those who have higher claims than that merely of the courtesy of a past age, to the title of learned. In laying down a minimum of preliminary requirements, it seems to me that a well-marked and decided distinction should be established between the requirements essential for those who are candidates for the higher honours of the profession, as the university degrees ought to be, and those who are candidates for a simple license to practise. This distinction cannot very well lie in the professional curriculum, seeing that in whatever station a man is to practise, he must know thoroughly all the branches of his profession, after having gone through as complete a course of study and as thorough a testing on professional matters as possible. Whilst, therefore, it might very well be laid down, that the higher qualifications should embrace one or more additional years of professional study, the chief distinction ought to be made, as, indeed, it can only rightly be made, in the amount of preliminary education and testing. The doctor should certainly not only be absolutely *doctus*, but also relatively *doctior*, than the man who has not gained the higher title, else why is he specially registered doctor? why, as such, does he claim precedence? If this title is not meant to point out to the public a man of higher literary and scientific attainments, it is nought—it only misleads. The distinction, then, ought undoubtedly to be kept up. Any system that would endeavour to level such distinction, and to keep down the standard of degrees in order that they may be enabled to compete with ordinary licenses to practise, is a false and retrograde system. But I think the tendency of public opinion is to maintain the distinction, and most unequivocally this view has been fostered, and more than once expressed in their minutes, by the Medical Council. Without presuming to lay down dogmatically the very items of distinction which seem advisable, perhaps I may be allowed to sketch out generally something like the following scheme:—

For the simple license to practise, it might be provided that every candidate be tested in English composition, writing to dictation, Latin, arithmetic up to decimal fractions, and chemistry; and in any two, at his option, of the following subjects,—viz., geometry, algebra, mechanical philosophy, Greek, French, German, botany, and natural history, including zoology and geology.

For a degree every candidate ought to be tested in English composition and writing to dictation, Latin, arithmetic to decimal fractions, Greek, chemistry, botany, and natural history, including zoology and geology; and in any two, at his option, of the following subjects,—viz., geometry, algebra, mechanical philosophy, French, German, and logic and metaphysics.

It will be observed that I have included chemistry amongst the preliminary subjects, as well as botany and natural history, all of which have been hitherto included in the professional curriculum for

the degree. With regard to botany, it ought to be looked on as, to a considerable extent, a training study, forming an excellent item of preparation for the study of medicine, by its teaching the student the diagnosis of plants, and by its making him familiar with classification. This cannot but be useful to the student who is by and by to apply analogous principles to the study of disease; besides it prepares him, by the physiological teaching which it infers, for the more easily understanding and mastering that most important basis of rational medicine—Animal physiology; prepares him also for the more efficient study of the *materia medica*, and fits him for occupying, with credit to himself and advantage to the cause of science, many important positions in the public service, especially abroad and in our colonies. The same may be said for natural history, including zoology and geology. Chemistry, I also consider, might with great advantage be studied before the strictly professional course is commenced. It may in part be considered a training study, but a knowledge of it is, I need not say, essential to the medical man, both for the understanding of the principles of medicine, and for assisting him in its practice. There can be no doubt that it is, in a very important measure, to the discoveries of chemistry in the future, as has been the case in the past, that we are to look for some of the greatest improvements in the science and art of medicine. A student who has had the advantage of making himself acquainted with chemistry at an early period of his studies, and before beginning his professional period, will find himself greatly aided in understanding many points in physiology which he will meet with early in his professional curriculum. Doubtless there are also many points in chemistry bearing on medicine which the student could not well understand at the early period I have indicated, and will, therefore, require to study later in his course; but a short supplementary course, when his studies have somewhat progressed, will easily supply this desideratum. But besides these advantages, which, as I believe, would be gained by throwing botany, natural history, and chemistry into the preliminary course, another most important object will be gained, viz., that thus you will make them subsidiary to the professional course, and not, as at present, hindrances, for thus you will disembarass the student of classes and examinations which occupy his time and attention, and fluster and worry him just at a time when it is of the utmost consequence that he should be at liberty calmly and uninterruptedly to devote his whole energies to the study of a difficult profession. Above all, you will prevent that which doubtless is an evil and a grievance under the present system, viz., the intercurrent, during professional study, of examinations on subjects not strictly professional, such as botany, natural history, and chemistry, which are of vast extent, so vast, as Professor Syme has well observed, as hardly to be compassed in a lifetime, even by those who have little else to attend to, and which embody such a myriad of facts as no memory, however good, can be expected to retain,—the very attempt, indeed, to retain a

sufficiency of which, to satisfy even a reasonable examiner, must seriously and injuriously interfere with important professional studies. I say, then, clear the student's way of these studies at an early period, let them take their own proper place and order, and let me add, their own due proportion,—let the examinations on them be more limited as to the area embraced than hitherto, and let them be completed before the commencement of the professional course proper. Supposing these arrangements to be carried out, then it is clear that the student will have more ample scope, if not verge enough, in his course of professional study, whether that extend to three years, or better, to four years, to devote himself to subjects more strictly professional, comparatively limited in number, and standing to each other in a more unbroken connexion than at present. His professional course will then embrace these subjects,—viz., demonstrative anatomy and dissection, anatomy and physiology, materia medica, including dietetics, surgery, physic, midwifery, medical jurisprudence, hospital attendance, with clinical surgery and medicine, morbid anatomy, medical chemistry, practical pharmacy, dispensary practice.

In regard to the sessions of study, it would be very desirable that instead of having, as at present, a long winter session of nearly six months, and a short summer session of three months, there should be two equal sessions in each year, of four months; the first session might commence on the 1st of November, and end on the last day of February, and the second session might commence on the 1st of April, and end on the 31st of July. The interval of a month between the winter and summer session would give the teacher and student needful relaxation, and the long holidays would, as at present, embrace August, September, and October. Some of the subjects lectured on might very profitably occupy two continuous sessions of four months—such, for example, as anatomy and physiology, which ought to be combined, and no longer, as at present in Scotland, dissociated, and ought to embrace histology, and such an amount of comparative anatomy as is essential for the proper understanding of many points in physiology. Surgery, also, might thus be made to embrace a larger amount of operative surgery than can be achieved in the present limited session. Practice of physic, too, might thus be made to embrace a course of morbid anatomy, given in the hospital. This would, in my mind, be a better arrangement than the present one of repeating systematic courses. Others of the subjects might be amply overtaken in a four-months' course, such as materia medica, midwifery, medical jurisprudence; and these ought to be summer courses, so as to leave more time for dissection in the winter, which is obviously the best season for the study of anatomy. Clinical lectures, both on surgery and medicine, which are of such importance, might, in my opinion, be rendered with advantage both less formal and more frequent than they are at present—a certain portion of the time occupied by the daily visit at the hospital being occupied by practical remarks on the cases which the students have just had the opportunity of seeing in the wards.

If the lectures are carried on in the way I have indicated, if the attention of the student is kept up by imperative attendance on class-examinations, if he is guided by his teachers as to his course of reading, then I would say that the professional course should not be interrupted, nor the student's attention diverted as at present from continuous study by intercurrent professional board-examinations. The examinations in all branches should be reserved till near the termination of the last year of study.

Grinding and cramming will have been discouraged by the imperative class-examinations; and the knowledge on the part of the student that the certificates of his appearances at these class-examinations will be submitted to the examining board at his final examinations, will act as a spur to diligence in study, from the commencement even to the end of his course. Class-examinations, thus used, are calculated to prove supremely useful: useful to the teacher, as showing him how far his pupils are understanding or profiting by his lectures; useful to the student, both as an incentive to and as a test of his diligence in study. To the good student they will prove a boon which he will prize highly; upon the student who is tempted to neglect his studies, especially in his early course, and to trust to his being able by intense cramming in the latter part of his course to prepare for his pass-examinations, they will constitute an excellent check. But ought class-examinations to supersede in any case final board-examinations? in other words, ought the power of granting licenses to practise to be virtually taken from conjoined boards, comprising the teachers of the students associated with experienced practitioners who are not teachers, whose duty it is to sit at the end of the course of study, and to take into consideration, at one time, the whole circumstances of a student's proficiency in the different branches of professional knowledge, taken together, and in connexion, with a view of judging how far he can safely go forth to the practice of his profession with or without the higher titles? Ought this power, so taken away from boards, to be transferred to individual teachers, even when aided by assessors, examining their own students in their classes on detached parts of these studies, and at different and detached times? Are licensing bodies, I ask, whether universities or otherwise, prepared or entitled thus to abnegate *pro tanto* their proper corporate functions, and to commit to the teachers of the students the licensing power? How are teachers to be controlled in the use of this great and responsible power? Where there are competing teachers, either in the same school or in different schools, would you not by such a system be actually holding out temptations to them with the view of attracting students, to exercise the power with undue lenity: a course which might please the student, but be unsafe for the public? On the other hand, would the student have a sufficient guarantee in such a system against a capricious and puzzling rather than a fair system of testing? Were the system desirable, which, I think, it is not, it might possibly be

practicable in its working were students to take their whole course, which they seldom do, in one school and under one set of teachers; but how can it be worked in the case of that vast majority of students who take their course at different schools, and under different teachers? Where are you to get assessors to be associated with the teachers, who are a numerous body? and how are you to remunerate them for the enormous labour which will be thrown upon them? and how are you to exercise a general control over the multiplicity of detached examinations which you thus propose to hold? What great object, after all, it may be asked, are you to gain, sufficient to induce you to try this experiment—for such even Professor Syme must, I think, admit it to be—which infers a complete *bouleversement* of a system under which the status of medical men has been steadily, and in a marked manner, raised? You say that the present system of examination is very irksome to the student, and that it interferes with that due attention to practical studies which is so necessary, and thus mars in great measure the very object of the test you apply. But is there not a fear that the applying of so sweeping a remedy, in order to relieve the student, may be fraught with danger to the public, whose safety ought to be with you the *suprema lex*? Are there not safer remedies within your reach more in consonance with the milder practice of the age, than one so violent as the virtual superseding to a considerable extent, for to this it amounts, of board-examinations? I have endeavoured to show that your object may be fully attained, more safely attained, by rearrangement and modification of the curriculum of study and readjustment of the tests; and that this can be done without such violent change of machinery as is proposed by those who have initiated this new movement. I have shown, I trust, how this can be done with the effect of proving a boon to the student, at the same time that it preserves inviolate the functions of the licensing boards, and thus, as I believe, best guarantees the safety of the public.

Let me briefly recapitulate the view I have presented. Make the preliminary studies and examinations in truth preliminary; for this purpose raise the age of commencing strictly professional study to eighteen; prune the professional course so that the student may have fewer courses of lectures to attend, and fewer lectures in each course; rearrange the sessions; make class-examinations imperative on teachers and students; see that ample time is left to the student for reading and reflection, and that his course of reading is properly directed; see that he has ample time and opportunity to avail himself of practical instruction in the dissecting-room, in the wards of the hospital, at the dispensary, in the laboratory; see that, while the class-examinations be as minute and searching upon all points connected with the subjects taught as may be desirable, the final examinations be chiefly based upon the requirements of practice, and be directed to ascertain whether the student retains that knowledge which he ought to retain, and without which he

cannot practise safely ; see that a distinction, as is right, be made between the curriculum and examinations for a simple license to practise, and those for a license to practise accompanied with a title of honour such as the degree of a university ; let these things be properly provided for, and regulated, and enforced by a code emanating from the Supreme Council of the profession, and, I believe, that every desirable object for the profession will be better gained than by rash and necessarily partial innovations of an experimental character, which may, and in my humble opinion will, prove detrimental rather than beneficial to the cause of medical progress.

Before concluding, there are two points to which I should wish to allude, however briefly. These are, 1st, The importance of making the final examinations as practical and demonstrative as possible ; and, 2d, The importance of the concentration of the at present far too numerous licensing boards, by combining them as provided for under Clause XIX. of the Medical Act.

That the examinations should be as much as possible demonstrative seems highly desirable. As you test a student on chemistry by means of chemicals and test apparatus—on botany by presenting to him specimens of various structures and classes of plants—on anatomy by making him demonstrate the parts on the subject—it seems surely rational as well as highly expedient that you should also test his knowledge of surgery or medicine at the bedside. Professor Syme, indeed, objects to this on the score of the inhumanity of subjecting patients to be made the subjects of examination by unpractised candidates for licenses. But surely, with discreet and practised teachers standing by, there could be little risk of injurious roughness or fatigue to patients any more than in the necessary examination into the cases of patients which is made by the resident medical men, and which, indeed, a properly qualified candidate should be competent to do, if not with all the tact and ease and certainty which long experience alone can give, at least in such a way as to testify that he may be safely sent forth to practise on the lieges. Professor Syme's pamphlet contains a sentence which, I think, were it correct, would give ample justification to the Army Medical Board for submitting all candidates for army appointments to re-examination on subjects regarding their knowledge of which the degrees and diplomas they produce ought to be an ample and definitive guarantee. "Candidates," says he, "for a license do not profess to be practitioners, and therefore could not with propriety be submitted to an ordeal of this (*i. e.* a practical) kind." Now, it appears to me, that if degrees and diplomas do not testify to a man's fitness to practise his profession with safety, whether in the public service or, it may be, in some distant country locality,—or, it may, be on board an emigrant vessel, far away from any professional advice or assistance,—or anywhere else ; then what is their value ? Why are universities and colleges granted charters and high privileges, but that they may guard the public from unqualified, that is, unsafe practitioners ? Why is there a register

of medical men with various titles? But believing as I do that degrees and diplomas are meant to guarantee safe practitioners, and having myself for years kept that important fact in view in performing my duties as an Examiner in the College of Surgeons of Edinburgh, I cannot help here, as the result of my experience, expressing the hope, that ere long, as a very important aid in securing such a guarantee, no man will be licensed to practise any branch of the healing art without having been subjected to practical testing at the bedside.

And now, finally, in regard to the expediency of combining and concentrating the too numerous licensing boards, I must state it as my conviction, that there is no one measure which would do more to equalize and make efficient medical education and testing, than the formation of combined boards for licensing in medicine and surgery, composed, in England, of the Colleges of Physicians and Surgeons and the Apothecaries' Company; in Scotland, of the Colleges of Physicians and Surgeons and the Glasgow Faculty; and in Ireland, of the Colleges of Physicians and Surgeons and the Dublin Apothecaries. Thus there would be constituted only three instead of nine separate boards. And if, further, the Universities could in some way be associated with these Boards in examining for the license to practise, the work of concentration would be then complete. The power of regulating the higher titles, as for Doctors in the Universities and Fellows in the Colleges, would still remain with these bodies respectively; these titles inferring higher qualifications, higher education, higher testing. The regulation of the profession by the Medical Council would thus be made more certain and more simple; uniformity of education and testing coincident with equality of privilege would be promoted; and the sources of division and antagonism between many of the licensing bodies which still, notwithstanding the Medical Act, exist, would be greatly diminished, if not removed. It would be well were the Medical Council to give their early attention to a matter so important. It is no new proposition; it is but a revival of what was proposed years ago by Sir James Graham's Bill. The circumstances which made shipwreck at the time of that most desirable measure are now altered; there has been in operation for upwards of five years a transition Act—for it is nothing more—which, though it may not have achieved in any large or successful measure what it was meant to achieve, seems to me to have so far paved the way to a better measure, by removing some of the obstacles which formerly hindered legislation on the broad and comprehensive and equitable principles of Sir James Graham's Bill.

In bringing these observations to a conclusion, I beg to say that I do not claim for them any merit of originality; much, nay, most of what I have said, is not new, having been said, and better said, by men of greater authority in the profession than I can claim to be. My object has been to put the subject in a plain, practical, may I add, common-sense point of view, which may perhaps be accepted as an additional peg on which to hang the discussion, now inevitable, of a matter of such vital importance to the interests of the profession.

ARTICLE III.—*On the Textural Changes which Occur in Inflammation of Serous Membranes.* By WILLIAM TURNER, M.B., London, F.R.C.S.E., Senior Demonstrator of Anatomy in the University of Edinburgh.

IN a Lecture delivered before the President and Fellows of the Royal College of Surgeons of Edinburgh on the 27th February 1863, and published in the April number of this Journal, I gave an account of the more important investigations made during the past few years into the mode of origin of the new cells formed in the course of certain pathological processes. In this lecture were incorporated various observations of my own on the same subject.¹ Among others I recorded some observations which I had made on the origin of the corpuscles of the coagulable lymph—the so-called inflammatory exudation corpuscles—in a case of inflammation of the pleura. Since that time I have availed myself of such opportunities as have presented themselves to prosecute additional inquiries into the process of inflammation in serous membranes, and in this communication I purpose recording the results of my observations made on various specimens of inflamed pleural and peritoneal membranes.

To carry out successfully an inquiry into the nature of the inflammatory process in a serous membrane, the attention of the pathologist should not be confined to the examination of the lymph coating its free surface, or to the mingled liquid and solid products lying in the serous cavity, but the membrane itself should be carefully inspected, not only at its free surface, but for some distance into its substance. This may be efficiently done by making sections through its entire thickness, and carrying the knife even into the subserous connective tissue. If a portion of the subjacent healthy texture is thus included along with the diseased in the section, the observer is enabled to make, in the same preparation, and from the same locality, a comparison of the healthy tissue with that in which the characteristic inflammatory changes have taken place. I have been in the habit of making these sections with a Valentin's knife, spreading them out carefully on a glass slide so as not to disturb the relations of the structures, and adding acetic acid and glycerine to assist in promoting the transparency of the parts.

The textural elements which enter into the formation of a serous membrane are epithelium and connective tissue. The epithelium consists of a simple layer of pavement epithelial cells. It rests on the subepithelial connective tissue. In the connective tissue, both the white and yellow fibres exist, the latter in considerable numbers. The connective tissue is always more compact immediately beneath the epithelium than in the parts further removed from it, from which circumstance the membrane-like appearance described as the basement membrane results. In the deeper parts of the texture the gradual blending of the connective tissue of the serous membrane

¹ See also the new edition of Paget's Lectures on Surgical Pathology, p. 287.

with the looser subserous connective tissue may be traced. The amount of this latter tissue is greater in the parietal than in the visceral portions of a serous membrane. In tracing the effects produced by the inflammatory process, the changes which take place both in the epithelial and connective-tissue elements of the texture ought to be studied.

In the specimens of inflamed pleura I have examined, the membrane was thickened and swollen, and covered by a soft layer of yellowish, flaky inflammatory lymph, which could be readily scraped off with a knife. When the lymph was removed an abundant bright red mottling of the membrane was noted. When the inflammatory lymph was examined microscopically, it was seen to be composed of small, pale, faintly granular cells, such as are familiar to all pathologists as products of the process of inflammation, and are described sometimes as the corpuscles of inflammatory lymph, at others as exudation corpuscles.

I have no observations to offer on the changes which the epithelium had undergone in the course of the inflammation. It had either been shed from the surface of the membrane into the cavity, or its characters had been so altered that it was no longer recognisable. Two opinions have been put forward, and supported by observations, of the part which the epithelium takes in the early stage of inflammation of a serous membrane. According to Dr Julius Cohnheim,¹ some of whose observations were made on animals killed the day after he had irritated the peritoneum, the epithelial cells were found to be increased in size, more opaque, with no longer a mosaic arrangement, but lying next each other as large round globules, with a large shining nucleus. In some cells fatty degeneration had begun, and this could be traced in others up to the stage of disappearance of the cell membrane, and destruction and resolution of the cell into granules. Dr E. Neumann's observations² agree with those of Cohnheim as far as relates to the degeneration and shedding of the epithelium cells. Dr Rindfleisch,³ again, regards the epithelium as not necessarily destroyed by fatty degeneration at the commencement of the inflammatory process, but as assisting in the production of the new-formed cells of the inflammatory lymph. He induced artificial peritonitis in a rabbit, and found that the epithelial cells had lost their normal, six-sided, flattened form, that their corners had become rounded, and their shape was more globular. The contents also were more opaque, and commencement of nuclear division was observed. Rindfleisch considers that there is a direct metamorphosis of the epithelial scales into cells which, through their rounded form and divided nucleus, resemble pus-corpuscles. Even if these conclusions of Rindfleisch's be accepted, I cannot but think that the part which the epithelium plays in the production of the cells of the inflam-

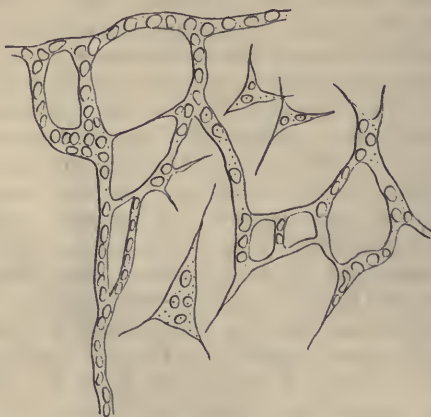
¹ Virchow's Archiv, vol. xxii. p. 516, 1861. ² Ibid. vol. xxiv. p. 202, 1862.

³ Ibid. vol. xxiii. p. 519, 1862.

matory lymph is comparatively unimportant, and that it is the subepithelial connective tissue we are more especially to look to as the seat of their formation.

When sections through the inflamed costal pleura were examined, before the addition of acetic acid and glycerine, a confused mass of new-formed cells mingled with the proper fibres of the sub-epithelial connective tissue in apparently inextricable confusion was seen. But after the addition of the above reagents had caused the white fibrous element of the tissue to disappear, the transparency of the textures was promoted, and the arrangement and relations of the new-formed cells could be followed, especially in those parts of the section where the elastic fibres were at a minimum. The new-formed cells were small, pale, and rounded, with faintly granular contents, and closely corresponded in their characters to those existing in the inflammatory lymph coating the free surface of the membrane. In those parts of the sections which lay immediately beneath this free surface, the cells were crowded together in great numbers, and formed closely packed rows or clustered masses. But somewhat deeper they were not so densely set, and here, therefore, their mode of arrangement could be more satisfactorily studied. To attempt to describe all the variations which they presented in the numerous sections I examined, would be tedious and of little practical value, but a general description may be attempted. In many places they were so disposed as to form a network, more or less close, which possessed greater or less degrees of irregularity in the size and form of its meshes. For the most part the cells were arranged in rows, though here and there they lost the linear disposition, and formed small clusters. The cells succeeding each other in any given row were either in contact, or almost in contact,

Fig. 1.

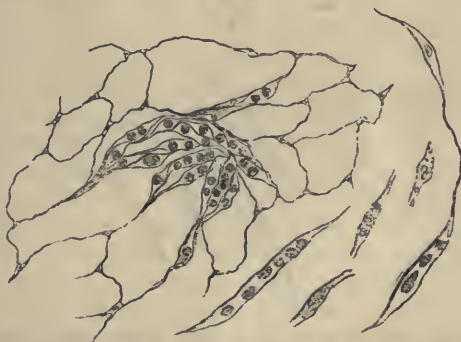


though occasionally intervals of somewhat greater extent existed between them. These cell networks evidently did not lie free in the

interstices of the texture, but were enclosed by an investing membrane, which appeared to constitute a tubular system possessing numerous anastomoses, though here and there the tubes gradually terminated in long pointed processes (Fig. 1). Cell-containing tubular networks presenting modifications of the plan just described and figured, could be followed through the greater part of the thickness of the inflamed costal pleura, though in some places the numerous yellow elastic fibres prevented the arrangement from being so closely traced. The constancy of these arrangements shows, I think, that these cell-containing tubular networks are not mere accidental occurrences in inflammations of the inflamed pleura, but are evidently due to something in the anatomical configuration of the part which determines that the new cells produced in the course of the inflammatory process should arrange themselves in such a manner. The numerous investigations, more especially by Donders, Virchow, and Von Wittich, which have of late years been conducted into the structure of the connective tissue, supply us with a means of giving a satisfactory explanation of the mode of production of these cell-containing networks. For it has now been demonstrated that there exists in the connective tissue, in addition to the ordinary well-known fibres, a distinct nucleated corpuscular element, the individual corpuscles of which give off processes and possess most commonly a fusiform or stellate shape. Between the processes of adjacent corpuscles, frequent anastomoses occur, so as to occasion a networklike arrangement in the texture.

The extended observations of Virchow, Billroth, C. O. Weber, Förster, and others, have shown that in the production of pus-cells and other pathological new formations, the corpuscles of the connective tissue play a most important part. If this texture be examined in the early periods of the inflammatory process, the single nucleus of the connective-tissue corpuscle may be seen to be constricted in the middle, as if dividing, or to have divided, into two or a greater number. The corpuscles themselves are enlarged and

Fig. 2.

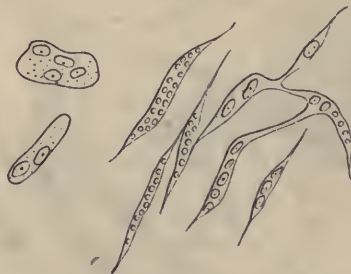


swollen, and contain two or more small, pale, faintly granular, cell-like bodies, corresponding in appearance to the cells which consti-

tute so essential a constituent of the inflammatory lymph (Fig. 2). With the further continuance of the inflammation the corpuscles swell out more, and become more distorted in shape; their anastomoses become larger and more distinct; the new cells formed in their interior are greatly multiplied, and instead of being collected merely in clusters at the spots which correspond to the original bodies or central parts of the corpuscles, they extend in rows along the interior of the dilated anastomosing processes. And in this manner arises an arrangement, of which Fig. 1 affords an illustration. At a still later period the proliferation of the nuclei of the connective-tissue corpuscles has increased to such an extent, and the new cells formed are so numerous, that the part seems to be altogether composed of these new productions, and all trace of their mode of origin is lost.

In the layer of pleural membrane investing the surface of the lung, the textural changes were not so satisfactorily traced as in the costal pleura, for the membrane was highly charged with small granules, which, from their form and the manner in which they refracted the light, were evidently fatty. Sections through the pulmonic pleura, even after the addition of acetic acid and glycerine, did not, as a rule, become so clear as to enable me to trace the arrangement of the new-formed inflammatory products in a very extended portion of any single section. The subjacent lung tissue was also much congested. But in limited parts of some of the sections the outlines of the corpuscles of the connective tissue could be traced, and the nature of their contents examined. Not unfrequently they contained fatty granules, which were sometimes arranged in single or double rows. Many variations, however, in the apparent disposition of these granules occurred, according as the corpuscles themselves possessed the stellate or fusiform shape. When the corpuscles were completely filled with these fatty granules, and when at the same time the intermediate texture was highly charged with them, nothing but a confused granular mass could be recognised. In other places, however, the corpuscles were free, or

Fig. 3.



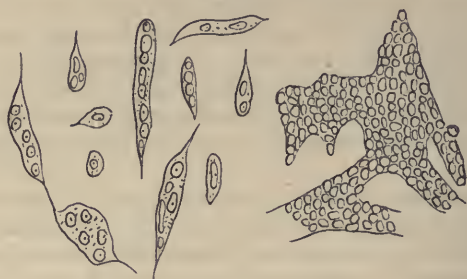
almost free, from fatty particles, and then other changes besides those of fatty degeneration could be traced.

In Fig. 3 a group of corpuscles is represented, some of which exhibit the fatty degeneration above described; whilst in others the phenomena of nuclear multiplication may be observed. In some of my sections, which included portions of the subjacent lung-tissue, a few flattened cells were seen (see the left hand of Fig. 3) floating free in the fluid in which the preparation was lying. In these cells nuclear multiplication had also occurred. They had all the characters of tessellated epithelium, and, it may be conjectured, were the loosened and separated epithelial lining of the air-cells of the lung.

The peritoneal membrane I examined had evidently been subjected for a longer period to the influence of the inflammatory process than the various specimens of inflamed pleuræ just described. The lymph on the surface was drier, tougher, more resisting, and not so easily scraped off with a knife. When vertical sections through the membrane were subjected to microscopic examination, no trace of the original epithelial covering could be seen. My observations were made, therefore, on the sub-epithelial connective tissue. The yellow elastic fibres formed so large a constituent of the deeper layers of the peritoneal membrane and of the subserous connective tissue, that the inflammatory changes were in these parts difficult to follow out. But in portions of the texture, situated between these deeply-placed elastic fibres and the original free surface of the membrane, many satisfactory views of the textural changes were obtained. Next the free surface, *i. e.*, in the part of the membrane presumably the longest inflamed, multitudes of new-formed cells, resembling those making up so large a part of the inflammatory lymph, were closely massed together. Somewhat further removed from the free surface, the new-formed cells were arranged in a linear manner, the rows of cells lying parallel to the free surface. When these rows were not too closely crowded together, so that they could be analyzed into groups, indications of an investing membrane for each group could be traced. In other parts of the sections the new cells formed irregular networks, closely comparable with those described in the inflamed pleuræ, and illustrated by Fig. 1; and outside the rows and clusters of cells, a distinct sharp line, such as an investing membrane would produce, was observed. When the network was close it was not easy to follow it far, and the difficulty of determining the presence of an enveloping membrane was proportionally increased. Further away from the free surface of the inflamed membrane the new-formed cells were much fewer in number, the departure from the normal appearance of the part was not so great, the corpuscles of the connective tissue, which had here undergone comparatively slight alteration in form, could be distinctly recognised, and in them the phenomena of nuclear multiplication, resulting in the production of broods of new-formed cells, were observed. In Fig. 4 some of these slightly altered corpuscles are represented. Such views are

of interest, not only from the positive evidence they afford of the intra-corpuseular origin of the cells produced in the course of the

Fig. 4.



inflammatory process, but from the assistance they give us in arriving at a satisfactory interpretation of the more complicated linear and network-like arrangements met with in some other parts of the sections.

On the right hand of Fig. 4. I have sketched a group of new formed cells, of the mode of origin of which at first sight it may appear difficult to give an explanation. But I would submit that such a group is produced by abundant nuclear multiplication in one or more adjacent connective-tissue corpuscles, for it still presents an approach in its form to the radiated system of anastomosing processes, so characteristic of those bodies, though necessarily much obscured by the distortion occasioned by the production of such a mass of new-formed cells.

From these observations I hold, with Virchow, that in inflammation of serous membranes the cells of the "coagulable lymph," produced so largely during the progress of the inflammation, take their rise from the pre-existing nucleated cellular elements of the texture, and that in their production the corpuscles of the connective tissue play the leading part. In none of my preparations, either of these or other inflamed tissues, did I see anything to satisfy me that the new-formed cells originated in an aggregation of visible granules or molecules in an exudation poured out into the interstices of the textures. On the other hand, the intra-corpuseular origin of these cells was in so many cases distinctly recognisable, and in others their linear network-like arrangement, with occasional clusters, was in such strict conformity with the disposition of the pre-existing corpuscles in the connective tissue, that I had no doubt that the pathologically new-formed cells owed their origin to the nucleated corpuseular structures normally present in the texture. And, in conclusion, I may state that the general result arrived at from these and most other recent observations on the inflammatory process is, that "an explanation of its phenomena is not to be looked for by referring them to actions of the extreme vessels, but to a disturbance of the forces which naturally exist in the extra-vascular portions of the inflamed part."¹

¹ John Goodsir: *Anat. and Path. Observations*, 1845; p. 43.

ARTICLE IV.—*Notes of a Complicated Case of Labour, with Remarks on the Postural Treatment of Prolapsus Funis, and the Management of the Third Stage of Labour.* By Dr ALEX. R. SIMPSON, Secretary of the Edinburgh Obstetrical Society.

(Communicated to the Edinburgh Obstetrical Society, on 9th December 1863.)

THE case which I wish to bring before the notice of the Society presents some features of interest in respect,—1st, of the diagnosis of pregnancy; 2d, of the duration of pregnancy; 3d, of the painlessness of parturition; 4th, of prolapse of the umbilical cord, and its remedy by the postural treatment; 5th, of the employment of the forceps; and, 6th, of the management of the third stage of labour.

1st, *Diagnosis of Pregnancy.*—Mrs A. B. was in full process of parturition when she arrived at the Infirmary on the 29th of November; but she had left home by the advice of her medical attendant, who saw her the night before, and told her she was labouring under a dropsical ovarian tumour. And yet nothing in obstetrics is more easy, when we are on our guard, than to distinguish between a gravid uterus at the full term and a dropsical tumour of the ovary. There may be a common sensation of fluctuation, a common smoothness of surface, even a common situation in the abdominal cavity, but it needs only the application of the stethoscope to detect the distinct placental and cardiac sounds, or the touch of the finger per vaginam to recognise the hypertrophied uterus with the moving body in the interior. In the present instance, the mistake was made by a very able and accomplished practitioner, simply from his omitting duly to examine the case. He found the woman seated on a chair when he was summoned to see her, and, having already made up his mind that she could not be pregnant, he contented himself with putting his hand over the abdomen, and feeling the tumour through her dress. He then told her that she should go off to Edinburgh and have something done for it. And when she asked him for a line to secure her admission into the Infirmary, he added, that they were all interested in this kind of tumour at present, and that no recommendation was needed, for her case would commend itself. Now, the prejudice in his mind may have arisen from the circumstance that, when the patient, who is forty-four years of age, and the mother of seven children, had miscarried at the fifth month two years ago, he had been led to form the opinion, which he then expressed to her, that she could never again become pregnant. But he was further led astray by the circumstance that more than ten months had elapsed since the date of her last menstruation; and it seems not to have occurred to him that the case might be, as indeed it was, a case of,

2d, *Protracted Gestation.*—The patient menstruated in the beginning of January; but the period lasted only two days, instead of four, as usual, having ceased on the 3d or 4th of the month. It was not

till she felt "stirrage" in May, however, that she imagined herself to be pregnant, and began to think of making preparations for her confinement. She expected herself to have been delivered about the close of September or beginning of October, but it was not, as I have stated, till the end of November that the event took place. Supposing her not to have become impregnated till the period succeeding that at which the catamenia so abruptly ceased, she could not have carried the child less than 300 days; and if, as is in the highest degree probable, both from the shortened menstruation and the date of quickening, she became impregnated at the period in January, we have a term of utero-gestation extending in this case to 329 days. The condition of the child at birth, and especially of its head, indicated a corresponding degree of development. It measured 21 inches in length, and weighed over $10\frac{1}{2}$ lbs. The head measured $14\frac{3}{4}$ inches in circumference; the anterior fontanelle was small, and the membrane firm; and the posterior fontanelle was so far obliterated, that the corner of the occipital could not be depressed below the parietal bones.

3d, Painless Parturition.—Our patient having had all idea of pregnancy banished from her mind, set out from home, and reached the Infirmary without experiencing any uneasiness; and it was only whilst she was sitting in the nurse's room, explaining the cause of her arrival, that a sudden gush of water from the vagina restored her to the conviction that she was after all to give birth to a child. The uterine contractions were going on, although she was unconscious of any pain; and they must have been going on for some time, for when the clinical clerk, Dr Watson, saw her, almost immediately after this rupture of the membranes, he found the os uteri already fully dilated, and the head exposed. The woman had given birth to all her former children easily enough; but with all of them she had, like other women, been conscious of the pain usually attendant on the uterine contractions. On this occasion, however, the first stage of labour was completed, not only without any suffering having been experienced on her part, but also without her ever being conscious that labour was in any degree in progress. And throughout the whole progress of the labour the uterine contractions seemed not to be accompanied with the slightest pain; for before the head entered into the pelvic brim, the patient was unconscious of any sensation of suffering when the hand over the abdomen could feel the uterus distinctly contracting; and afterwards, when the head was passing through the pelvic canal, there was no kind of pain, only a feeling of fulness resulting from the pressure of the head on the soft parts of the pelvis. The histories of such painless labours have from time to time been related to our Society; Jourdain,¹ Chailly,² Mont-

¹ Velpeau, *De l'Art des Accouchemens*, vol. i. p. 451, Paris, 1835.

² Chailly-Honoré, *Traité pratique de l'Art des Accouchemens*, p. 244, Paris, 1842.

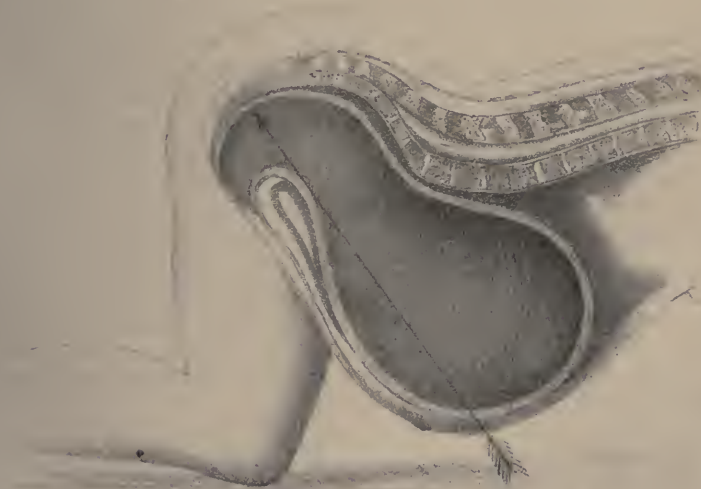
PROLAPSE OF THE FUNIS.

FIG 1.



In Fig 1 the arrow represents the direction of the uterine axis, which is forwards and downwards; the woman being on her back.

FIG. 2.



In Fig 2 this axis is represented inverted by the change of position.

gomery,¹ and many others, have published similar cases ; and their importance in a medico-legal point of view calls for a due notice of them in works on Medical Jurisprudence.² I had never before met with a case of absolutely painless parturition ; but Dr Von Ritgen, the venerable professor of midwifery at Giessen, told me some years ago, that in the course of his practice he had seen seventeen women who passed through the parturient process without any pain ; and from his observation of these cases he had been led to form the conclusion that the act of parturition is normally and physiologically a 'painless one, which only becomes painful and pathological in consequence of the abnormal and artificial mode of life led by the great mass of civilized womankind. His conclusion I have sometimes advanced as an argument in answer to those who object to the use of anæsthetics in midwifery, on the ground of the fancied physiological character of the pain.

4th, Prolapsus Funis, and its Replacement by the Postural Treatment.—I first saw the woman on going to visit, for my uncle, the patients in his ward in the Infirmary, at one o'clock P.M., about a quarter of an hour after she had been seen by Dr Watson. On making an examination, I found that a complication had occurred, from the falling down of a loop of the umbilical cord, of four or five inches in length, opposite the left sacro-iliac synchondrosis. The umbilical vessels were pulsating vigorously, and the prolapsus must have taken place very shortly before, as there was none to be felt when Dr Watson made the examination.

We can easily understand the occurrence of prolapsus of the funis in cases of preternatural presentations and mal-presentations of the head, or where, from contraction of the pelvic brim, the presenting part of the child is prevented from adapting itself closely to the lower segment of the uterus ; but the conditions of its descent in cases of normal head-presentation have not yet been accurately ascertained.

In the present instance, we have a concurrence of three of the conditions that have been more especially insisted on as favouring the occurrence of this accident. *First*, The patient was a multipara, with a very relaxed and dilatable cervix uteri ; and, perhaps, there was a want of tonicity in this part of the organ, associated in her with the absence of sensation during uterine action. *Secondly*, The placenta was placed very low down on the uterine wall, for the opening in the membranes was bounded in part by the placental margin ; while, *thirdly*, the umbilical cord was inserted into the placenta within an inch of that part of its border ;—two conditions the importance of which have come to be abundantly acknowledged since the younger Nægele specially called attention to them in an essay on the subject.³ I might add, that the cord was of more

¹ Signs and Symptoms of Pregnancy, p. 607, London, 1856.

² *e.g.*, Wharton and Stillé, Philadelphia, 1855, p. 307.

³ H. Fr. Nægele, Commentatio de causâ quâdam prolapsus funiculi umbilicalis in partu, non rarâ illâ quidem, sed minus notâ, Heidelb. 1839.

than average length, and measured 21 inches, for this too has been noted in connexion with prolapsus of the cord; but what exact share is to be attributed to each of these elements in the production of the complication, it would be difficult to decide, for it is a kind of case in which the mind of the accoucheur is for the time less taken up with the cause than with the cure; he is more anxious to avert the consequences of the accident, than to determine how it was produced.

And here, let me observe, that the great variety of expedients that have been adopted for the remedy of this complication, and the vast variety of instruments that have been contrived for the reposition of the descended cord, are a sufficient indication of the imperfection and unsatisfactoriness of each and all of them. And when we look to the recorded results of these various forms of treatment, and find that, even in the best hands,¹ little more than two-thirds of the children are saved, while the average mortality in the general mass involves more than the half, we are prepared to welcome a suggestion so simple and safe, and to adopt a measure so satisfactory as that described in 1858 by Dr T. G. Thomas of New York, under the designation of "the Postural Treatment." The history of the operation, and the mode of carrying it out, will be at once understood if I quote the words and copy the illustrations of the ingenious author.² He says, "In a course of lectures on obstetrics, delivered by me in the University Medical College of this city, about two years ago, I closely investigated this subject, and came to the following conclusions:—*First*, That the causes of the persistence of this accident (whatever may at first have produced it) reduced themselves to two, the slippery nature of the displaced part, and the inclined plane offered it by the uterus, by which to roll out of its cavity; and *second*, That the only rational mode of treatment would be inverting this plane, and thus turning to our advantage not only it, but the lubricity of the cord, which ordinarily constitutes the main barrier to our success. This, I found, could be readily accomplished by *placing the woman on her knees, with the head down upon the bed*, in the posture assumed by eastern nations in worship, and now often resorted to in surgical operations upon the uterus and vagina. Let it be remembered that the axis of the uterus is a line running from the umbilicus, or a little above it, to

¹ Professor Hecker, of Munich, in the recently published second volume of his very instructive work on Clinical Obstetrics, gives the statistics of twenty-nine cases of head presentation complicated with prolapsus funis; and, after stating that nineteen out of the twenty-nine children had been rescued, he uses these words:—"I do not believe that we can in general achieve much more, for we have too many difficulties to contend with, and there are too many eventualities that may render the results nugatory.—P. 184 of *Klinik der Geburtshunde*, ii. band, 1864.

² See the accompanying lithograph, showing the axes and positions of the uterus, relatively, (1.) in the usual posture on the back, and (2.) in the reversed posture upon the knees and elbows.

the coccyx ; and it will be seen that by placing the woman in this position, it will be entirely inverted."¹ Although six years have already elapsed since Dr Thomas read his Essay before the New York Academy of Medicine, the proposal is not yet widely enough known, or, at least, the results of the practice have not yet been recorded in sufficient abundance to allow us to make a statistical comparison of it with the multifarious methods of treatment which it promises to replace. But, I am well assured, that when it shall come to be adopted as the common method of treating cases of prolapse of the cord, when interference is required, the high mortality of this complication will be found to be very materially diminished.²

In the special case before us the result was in every respect most gratifying. Having placed the patient on her elbows and knees, I passed the fingers of the right hand into the vagina, and carrying down the displaced loop of cord into the os uteri, I could feel it slip away past the presenting head into the dependent uterine cavity. Friction was then applied to the uterus to increase the contractions ; and these having been still further stimulated by the administration of a full dose of ergot, and the head having fairly entered into the pelvic brim, the patient was made to resume the ordinary obstetric position in about a quarter of an hour from the commencement of the operation.³

¹ An Essay on Prolapse of the Funis, with a New Method of Treatment. In Transactions of the New York Academy of Medicine, 1858, vol. ii. p. 26.

² Dr Thomas, with an easily intelligible confidence in the self-commendatory character of his suggestion, gave it to the profession supported by the results of only two cases. Dr Brandeis, of Louisville, has published three cases in proof of the advantage of the postural treatment, but avers that the operation will not succeed where the liquor amnii has entirely escaped, and the uterus is firmly contracted around the child. I have, however, been told of cases where the operation has succeeded admirably, although the waters had all escaped. See Medical Times and Gazette, 1860, vol. ii. p. 220.

³ Dr Churchill (*Midwifery*, 1860, p. 459) wonders that no one had ever before thought of this plan, "so simple, and so in accordance with common sense." But I have been informed by Dr Priestley, that Mr Bloxam, of St George's, London, had used this kind of treatment for years in cases of prolapsus funis, although he had never published any account of it. And in Canstatt's Jahresbericht for 1856, vol. iv. p. 514, reference is made to a case successfully treated by the postural method by a Dutch obstetrician, Dr Kiestra, who recommends that, in cases where the patient cannot be kept long enough *à la vache*, she should simply be laid on her side, with the pelvis very much elevated.—*Niederl. Weekbl. von Geneesk.* April 28, 1855. The idea seems to have occurred afterwards independently both to Dr Thomas and Dr Theopold. In the *Deutsche Klinik*, No. 27, 1860, Dr Theopold suggests that in cases of prolapsus funis we should place the patient on her knees and elbows ; or if there be any obstacle to the assumption of this position, that we should make her lie on the side down which the cord has escaped, and then, by placing some pillows under the pelvis, the plane of the uterus would be again inverted, not to the same degree, but still sufficiently to allow the cavity of the organ to have a level so much below that of the os as to favour the reposition of the cord and its retention in utero.—*Monatsschrift für Geburtskunde*, vol. xvi. p. 394. Are not the differences which have been observed in the relative frequency with which prolapse of the cord occurs in France, England, and Germany, to be

5th, Application of the Forceps.—The uterus continued to contract regularly and steadily, though painlessly, but the advance of the head was so very slow, in consequence of its large size and extreme ossification, that after the lapse of an hour and a half, or two hours, I deemed it right to act on the principle, which has ever received the hearty sanction and support of this Society, that we ought to interfere to avert the evils of delay, rather than to wait till nature has done her utmost, and left the patient prostrate, and, perhaps, after all undelivered. The woman was accordingly brought under the influence of chloroform, when Dr Watson applied the forceps, and speedily effected her delivery. With the birth of the child in this manner, all peculiarity in the history of the case terminates. But I may still be permitted to add a few sentences as to the way in which we conducted,

6th, The Management of the Third Stage of Labour.—With the left hand over the abdomen, I followed down the contracting uterus, as the body of the child was being expelled from its cavity; and then grasping the uterus, at first gently, then with more force, I compressed it until, within five or six minutes, the placenta, with the membranes, was driven into the vaginal orifice and removed. At first sight it will be averred that there is nothing new in this kind of procedure; and it is not as a novelty in practice that I mention it now. Yet I apprehend that though a few practitioners amongst us¹ are in the habit of following out this plan in most of their cases, the ordinary practice of the profession in Britain materially differs from it, and consists, as we find it laid down in all our text-books, of waiting ten or fifteen minutes till the return of uterine contractions may have detached and expelled the placenta, then examining to discover the position of the afterbirth, and removing it; and when it does not come away at once, making gentle traction on the cord, while the uterus is stimulated to more energetic action by occasional friction, but not with such a forcible degree of compression as would suffice to separate and squeeze out the contents. Or if, in the practice of some obstetricians, the external manipulation of the uterus is insisted on as *the chief* element for successful completion of the third stage, yet even with them the internal interference with the cord and placenta is not entirely laid aside.

in some degree explained by the different positions in which parturient women are placed in these respective regions? In France, where, though the patient is laid on her back, the pelvis is kept elevated, the complication occurs, according to Churchill, only in 1 in 373 cases; in Britain, where the patient is kept on her side, on a nearly level surface, it occurs in 1 in 210½ cases; in Germany, where the patient is placed on the back, with the shoulders higher than the pelvis, it occurs as often as 1 in 162½ cases.

¹ Dr Newman on the Management of the Placenta.—*British Medical Journal*, 1860, p. 356. I hope to be able to lay before the Society, in the course of this session, the statistics of 200 cases conducted under the superintendence of Dr Newman, and kindly drawn up by Mr Alfred Watson.

It was only by degrees that the present practice developed itself out of the expectant kind of treatment that followed the rough measures so much in vogue in the early part of the last century; and we find Dr Wallace Johnson,¹ who seems to have been the first to publish instructions for the treatment of the third stage with the aid of external pressure, recommending that the compression be made at first by the two hands of the parturient woman, and only subsequently by the practitioner. Then Charles White, of Manchester,² states more precisely, that when after the birth of the child a pain comes on, "the secundines will be easily extracted by gently pulling the navel-string, and here an easy pressure upon the abdomen, by assisting the uterus to contract, will be of service." Subsequently, Dr Clarke, of Dublin,³ rendered the practice still more perfect, by insisting on our "pursuing, with a hand on the abdomen, the fundus uteri in its contraction until the fœtus be entirely expelled, and afterwards continuing for some time this pressure, to keep it, if possible, in a contracted state."

But in Germany, up till within the last few years, interference in the last stage of labour has been directed rather to extraction of the secundines by traction upon the cord from below than by pressure upon the uterus from above, as may be seen by a reference to the standard works of Scanzoni,⁴ of Würzburg, Braun,⁵ of Vienna, etc. Even Professor Spiegelberg, of Freiburg, who has taken an active and important part in the advance that is now being made in this direction in German practice, gives in his text-book,⁶ published in 1858, more prominence to the traction by the cord than to the compression of the uterus. At the meeting of the Association of Physicians and Naturalists, held in Königsberg, in September 1860,⁷ Dr Credé, the distinguished Professor of Midwifery in Leipzig, brought prominently before his professional brethren the results of his experience, and proposed as the general rule, in the treatment of the last stage of labour, that the practitioner should seek to effect the expulsion of the after-birth and membranes from the genital cavities by external manipulation alone, without interfering with the cord, or introducing the fingers into the vagina. He had already recommended this kind of practice in his Clinical Lectures⁸ on Midwifery, some years before; but his observations seemed to have exerted no widespread

¹ A New System of Midwifery, 1769, p. 200. In a note he speaks of the propriety of his practice being "confirmed by Dr Hunter and Dr Harvie, the latter of whom appears to have been the first who recommended it in his lectures."

² On the Management of Pregnant and Lying-in Women, 1772, p. 110.

³ Collins' Midwifery, p. 121.

⁴ Lehrbuch der Geburtshülfe, 3d edition, p. 253.

⁵ Lehrbuch der Geburtshülfe, Wien, 1857, 194.

⁶ Lehrbuch der Geburtshülfe, p. 120.

⁷ Monatsschrift für Geburtskunde, vol. xvi. p. 337.

⁸ Klinische Vorträge über Geburtshülfe, 1853, p. 599.

influence till he came forward at the meeting referred to, and, after showing the well-known dangers attendant on the common practice of pulling at the cord, and the great success of his own, made the bold allegation, that when the new plan of treatment should have come into general use, "the spectre of the adherent placenta would be scared away" from the domain of midwifery.¹ Then the profession took the matter up, and Abegg, in Danzig,² Strassman,³ in Berlin, and others,⁴ published successful results from the adoption of the new practice. We may judge of the improvement effected by the introduction of Credé's plan of treatment by the statistics of Bossi,⁵ who states that, in these clinical wards at Vienna, where the new method was in all cases adopted, the cases of post-partum hæmorrhage only amounted to 1·47 per cent., while in the other wards, where the old line of practice was followed, these amounted to 3·52 per cent. In the former, the hand had to be passed into the uterus to separate the placenta only once in 315 cases; in the latter, once in 78. Then we find Goschler⁶ averring that incarceration of the placenta is most frequently due to an inflexion of the uterus, resulting from its relaxation after labour, and that this can be most effectively treated by Credé's method; and the results of the practice in the wards of the Berlin Maternity, as given by Dr Winkel,⁷ are all in favour. In the new edition of Nægele's Text-book, the editor, Dr Grenser of Dresden,⁸ states that he "has introduced this practice into the lying-in hospital at Dresden during the last two years, and has likewise employed it extensively in private practice, so that he can commend it on the ground of the fullest experience." The name of Professor Spiegelberg⁹ has been associated with that of Professor Credé in connexion with this improvement in German obstetric practice, although his practice differs from that of his Leipzig colleague, in that he does

¹ It ought, however, to be noted that Dr Credé has somewhat modified this statement in a more recent article, "Ueber die zweckmassigste Methode der Entfernung der Nachgeburt," in the next volume of the same journal, p. 274; and also in a note to his abstract of Bossi's paper in the twenty-second vol. p. 310.

² *Monatsschrift für Geburtskunde*, October 1861, p. 264.

³ *Verhandlungen der Gesellschaft für Geburtshülfe in Berlin*. Sitzung von 26 November 1861. In *Monatsschrift*, vol. xix. p. 132.

⁴ *e.g.*, Some of the members of the Berlin Obstetrical Society, at the meeting referred to. An article by Van Rooyen, in *Donder's and Berlin's Archiv*. vol. iii. p. 211, in favour of the new method, is noted in *Canstatt's Jahresbericht* for 1862.

⁵ *Wiener Medicinische Wochenschrift*, 1863, Nos. 30-32.

⁶ *Allgemeine Wiener Med. Zeitung*, 1863, No. 37, in *Monatsschrift*, vol. xxii. p. 313.

⁷ *Zur Entfernung der Nachgeburt*, in *Monatsschrift für Geburtskunde*, vol. xxi. p. 365.

⁸ *Nægele's Lehrbuch der Geburtshülfe*, von Dr Grenser, 1863, p. 246.

⁹ *Erfahrungen und Bemerkungen über die Störungen des Nachgeburtsgeschäftes*, in *Wiener Med. Zeitschrift*, ii. 1861, p. 39. See *Canstatt's Jahresbericht* for 1862.

not seek to effect the complete expulsion of the secundines from the genital canals by external pressure, but rather follows the British practice of following down the uterus with the hand, and then aiding the contraction of the uterus in the expulsion of its contents by external pressure.¹ Doubtless the result of all these discussions will be to bring the German practice more into correspondence with ours; but perhaps we also may have something to learn in the way of trusting more than we have been in the habit of doing to uterine compression, and less to tractions on the cord.

Let me add, that in trying to follow out the process of Credé, we may require to exert very firm, steady pressure on the uterus with one or both hands. In the first cases in which I attempted it, I failed to effect the extrusion of the placental mass from the vaginal canal,—which is an essential point in the procedure,—simply from not making the compression with sufficient vigour.

ARTICLE V.—*Two Cases of Injury of the Urethra, with Complications.* By P. H. WATSON, M.D., F.R.C.S., Surgeon to the Royal Infirmary, Lecturer on Surgery, Edinburgh.

(Read before the Medico-Chirurgical Society, 3d February 1864.)

CASE I.—In the beginning of June 1862, I was requested to see J. M., æt. 56, on account of stricture of the urethra and fistula in perinæo. The history of this case was as follows:—About thirty years ago he sustained a severe bruise of the perinæum and scrotum, when riding on horseback, which occasioned bleeding from the urethra, and severe scalding pain on micturition. The former lasted for a day or two; the latter continued for some weeks, and was attended by a gleety discharge from the canal. Although the pain ceased, the stream of urine continued small, and his micturition impeded. His symptoms were not, however, of a kind to occasion any anxiety, and did not prevent him from following the active and laborious occupation of a postilion.

Within the last fifteen years, however, his symptoms have gradually become aggravated, and characterized by frequency in micturition, which disturbed his night's rest, latterly rendering it impossible for him to follow his ordinary occupation as a coachman. Within the last ten years retention of urine has occurred from time to time, sometimes relieved by opiates and the hip-bath, but latterly requiring the use of the catheter.

About five years ago, in one of these attacks of retention, he was under the care of a practitioner, who endeavoured to force a passage with a large-sized catheter; but failing in his efforts, he obtained

¹ See an excellent article on the subject in the *Monatsschrift für Geburtskunde*, vol. xxii. p. 15. *Bemerkungen zur "Behandlung der Nachgeburtsperiode,"* von Heinrich Schüle.

further surgical assistance, and the patient was temporarily relieved with extreme difficulty, a small-sized catheter having been introduced while the patient was under chloroform.

Abscess in the perinæum and scrotum followed, which was permitted to open spontaneously, and from the opening so formed behind the scrotum the patient continued for a time to void his urine with wonderful comfort and freedom. Since then, however, abscess after abscess has formed, which has reduced the patient to his present miserable condition, and converted his perinæum, scrotum, and penis, into the state now to be described. For the last eighteen months not a drop of urine has passed by the urethra, the whole has been evacuated by the openings in the perinæum, so that he has been obliged to assume the sitting posture whenever the call to empty the bladder came upon him. The penis, scrotum, and integuments of the perinæum are tumid, hard as cartilage, congested, and excoriated. The penis is enormously enlarged, resembling closely in form the clenched fist from the wrist downwards, the preputial covering being so swollen as not to admit of the glans penis being disclosed. The perinæum is studded with openings from the verge of the anus forwards, the largest of which is situated about an inch behind the scrotum.

On employing a bougie for exploration, the opening of the urethra was with difficulty found within the cavity of the swollen and indurated prepuce; but when the orifice was discovered, the instrument could be passed along the canal as far as the posterior aspect of the scrotum. Here it was arrested, and could only pass further in a lateral direction, obviously altogether to one side of the line of the urethra. The direction which it followed could not, however, be made out, through the thickened and indurated textures of the perinæum. The same difficulties obstructed the passage of a urethra-probe of the smallest size.

As there was no urgency in the symptoms from retention, or the formation of any new collection of matter, I directed the patient to keep his bed constantly, to employ fomentation and hip-baths, and to keep up the action of the bowels with laxatives, using opiate suppositories at the same time, to diminish the irritability of part and system. This treatment, employed for a fortnight, diminished in some degree the swelling and induration; the irritability of system had also become less, the ability to retain his urine for a few hours greater than before, and the excoriated surfaces had nearly healed. Still no instrument could be passed along the strictured part of the urethra, and the water all passed by the perinæum.

I accordingly determined to open the urethra in front of the stricture, to attempt to introduce the grooved staff through the stricture, to divide it, if possible, and thus to relieve the patient from his painful condition.

Accordingly, on Monday, the 30th of June 1862, with the

assistance of Drs John Duncan, William and Claud Muirhead, and Mr Alexander Miller, having placed the patient under chloroform, I passed the grooved, probe-pointed stricture staff down to the site of stricture; but finding that it could not be insinuated through the stricture, I passed the largest-sized stricture staff down to the site of stricture, and along the false passage which led towards the right side. Holding it thus, I opened the canal in front of the site of stricture, and, withdrawing the staff, I again attempted to pass the small instrument into the obstructed canal, using the finger in the wound as a guide to the further progress of the instrument. Foiled in this endeavour, I again introduced the staff, and passing the forefinger of the left hand up the rectum, so as to recognise the tip of the prostate, I carried a sharp-pointed long bistoury into the textures of the perinæum, in the middle line in front of the verge of the anus, and carried it upwards until I felt that its point had entered the membranous portion of the urethra. Cutting straight forwards in the middle line, but more superficially, I divided the whole thickness of the condensed perinæal textures as far forwards as the incision already made behind the serotum. Through this free incision I could now distinguish the staff, not exposed, but lying parallel with the line of the urethra, towards its right side. Inserting the knife into its groove, I carried it backwards so as to divide the false passage throughout its whole extent. I then passed the common short catheter from the posterior part of the perinæal wound into the bladder, drew off what urine was contained in the viscus, and retained the instrument, tying it in in the ordinary manner. There was but little bleeding, the condensed walls on each side of the incision resembling cartilage rather than vascular textures. A considerable opiate was administered by the rectum immediately after the operation.

1st July.—The patient passed a quiet day yesterday after the operation, and slept well during the night. He has taken a good breakfast of tea and toast. The pulse is quiet, and there has been no bleeding.

4th July.—All has gone on well; he has not required any opiate since the operation. Catheter removed.

5th July.—Urine escaping freely through the wound in the perinæum, but easily retained for four or six hours without any feeling of irritation. He complains, however, much of the scalding of the wound during and after micturition. I to-day attempted to pass the small probe-pointed stricture staff, and found that it now could be conducted along in the direction of the urethra from the anterior part of the incision, where the canal had been opened anterior to the obstruction. The thick part of the instrument was, however, arrested. I therefore at once inserted a bistoury into the groove, about a quarter of an inch behind the thick portion of the instrument, and cut forwards. The staff could now be passed onwards to an extent commensurate to the incision, but again was

arrested. I now passed the point of the knife into the groove, with its edge turned backwards, and, carrying knife and staff onwards together, divided the textures for about half an inch further. The staff now passed readily onwards, the point appearing behind in the posterior part of the wound, and was easily conducted into the bladder. To make absolutely certain that no obstruction remained, I passed a No. 10 bougie into the bladder.

From this period onwards the patient's progress was uninterrupted. The perineal incision healing rapidly, the thickening and condensation of the tissues melting away during the suppuration of the wound. The thickening of the scrotum and penis, however, still continued. A No. 10 bougie was passed once a-week, to maintain the patency of the canal, and the perineal wound was finally and completely healed by the end of August.

26th January 1864.—To-day, I saw J. M., and passed for him a No. 8 bougie with the greatest ease. He has not had a bougie passed since the 24th August 1862; and, during the interval, he informs me, he has enjoyed uninterrupted health. The swelling and hardness of the tissues of the penis, scrotum, and perineum, are now quite gone. He declares he never was in better health in his life, and his appearance certainly corroborates the statement.

The points of importance, it seems to me, in this case are,—

1st, The origin of the stricture, in a laceration of the urethra, probably affecting the canal only in part, but sufficing gradually to produce the ordinary symptoms, progress, and results of stricture of the urethra.

2d, The contraction of the canal in front, after the formation of abscess and fistula in perineo, becoming so complete as to prevent the escape of any urine by the urethral orifice, while the canal was rendered impermeable to instrumentation by the great degree of constriction, along with the thickening and induration of surrounding parts.

3d, The treatment was peculiar, in so far as the first operation was a modified form of the old *bouttonniere* perineal incision, but afterwards rendered accurate, so far as the stricture was concerned, by its division being effected upon the ordinary grooved staff.

4th, The permanence of the relief afforded by the operation: nineteen months having elapsed since its performance, and seventeen since the patency of the canal was maintained by the use of the bougie.

CASE II.—On the morning of the 6th December 1862, I was requested to see R. W., æt. 21, who was stated to be suffering from retention of urine, due to an injury of the perineum. I found the patient lying upon his back with his limbs drawn up, complaining of severe pain in the hypogastrium and perineum, a great desire to micturate, and a complete inability to pass a drop of water. His medical attendant, who requested me to see the case, had already attempted, but failed, to afford relief.

It seemed that on the previous evening, when riding a young Irish horse, which he had lately purchased, up the Lothian Road, the animal became restive and unmanageable. After a vain attempt to check it, he had to submit to its bolting with him. Giving the animal its own way till it reached Wright's Houses, he again attempted to check it, and as he came opposite to Bruntfield Place, turned its head to the meadow side of the road, hoping that the ditch and high bank might bring it to a stand-still. The horse, however, took the leap, clearing the ditch and bank, and in doing so threw him forward upon the pommel of the saddle, his perinæum coming in contact with its prominence. The effort had the desired effect in checking the horse, but the rider now found that the pain in the bruised part, and the sense of increasing swelling, altogether prevented his keeping the saddle. He accordingly dismounted, sent the horse to its stable as soon as he could get any one to take care of it, and came home himself in a cab. On taking off his clothes he found blood issuing from the urethra, but as he had then no desire to make water, went to bed, and sent for his medical attendant, who ordered warm fomentations and an opiate.

In the morning, when seen by me, he was complaining, as I have mentioned, of retention of urine and very considerable pain in the perinæum. On attempting to introduce a catheter, it passed into a large pouch which communicated with the perinæal part of the urethra. Within this pouch the point of the instrument could be passed, in different directions, as far back as the triangular ligament, while the sensation was that of passing into and through a mass of coagulum; the continuity of the urethra could not, however, be made out, so as to convey the instrument into the bladder. I accordingly passed a stricture staff of large size, and carrying it backwards in the middle line as far as the pouch permitted, I introduced a bistoury into its groove, about an inch in front of the anus, and laid open the perinæum as far forward as the anterior termination of the perinæal bulge. This free incision gave vent to large masses of coagula and some recent blood. On sponging out the cavity and removing several adherent masses of coagula, I at once was able to feel and recognise the posterior extremity of the urethra in a prominent nipple-like projection in the posterior part of the cavity. Into its aperture I introduced a short catheter, and drew off the urine from the distended bladder. As considerable arterial bleeding still continued, I cleared out the wound and tied the only bleeding vessel which I could detect. It lay upon the left side of the urethra, and upon rather a deeper level. As still some fluid blood escaped laterally, not in jets, but in a smooth uniform stream, I plugged the cavity with dry lint, applying a T bandage to retain the compresses in their place.

In the evening the patient was comfortable, plenty of urine was coming through the catheter, and the plugging, though damp with blood, seemed to control all escape.

Wednesday 10th.—There has been no return of the bleeding. The plugging has become loose, and saturated with urine. I accordingly removed it along with the catheter.

In the afternoon I was sent for, as bleeding had come on from the wound. On my arrival I found the wound full of a dark coagulum, and arterial oozing still going on. This, however, ceased as soon as the clots were removed and the wound sponged clean. But, as a matter of precaution, I again introduced the catheter and plugged the wound. On visiting the patient in the evening I found him white and blanched, his pulse quick, the urine coming from the catheter deeply tinted with blood, and the instrument requiring to be cleaned from time to time because obstructed with coagula. As the bleeding was obviously still continuing, and as the patient was becoming more and more anæmic, it became obvious that something must be done to arrest the hæmorrhage.

I accordingly asked Mr Spence to see the patient with me. Having placed the patient upon a table, and administered chloroform, I secured him in the lithotomy position. On cleaning out the wound the hæmorrhage was seen to come welling up in a continuous stream of florid blood from its outer and posterior part. The opening, though free, did not, however, permit the deepest part of the cavity at this part to be fairly disclosed. I accordingly extended the incision laterally in the direction of the ordinary lithotomy wound, and now, upon sponging out the cavity, the arterial jet was seen proceeding from the side of the ascending ramus of the ischium, obviously coming from the artery of the bulb where it is given off from the internal pudic artery. Having seized the bleeding point by means of artery forceps, I applied a ligature, when the stream of blood at once ceased. From this period the patient made an excellent recovery, and was out going about in about six weeks after the injury.

A fistula in perinæo however still continued; and as this appeared to be due to the contracted condition of the canal at the site of rupture, I passed a No. 10 bougie from time to time to insure the patency of the urethra.

In the beginning of December 1863, he called upon me, suffering from great urinary irritation, frequency of micturition, pain after making water, uneasy sensations in the hips and limbs, with the occasional passage of blood from the bladder. The fistulous aperture, which had contracted to a mere pin-point which would not admit a probe, was now a pouting opening from which pus flowed on pressure made on the perinæum; and from the history of his case during the previous weeks, it was obvious that an abscess in connexion with the contracted condition of the urethra had recently formed in the perinæum. On attempting to pass a No. 10 bougie into the bladder, I found its course obstructed at the site of injury, and that a No. 7 was the largest size which could be carried into the bladder. No sooner had the instrument entered the bladder, than an intense

and irresistible desire to pass water produced complete evacuation of the whole of the urinary contents of the viscus, and brought a calculus in contact with the beak of the bougie. With the finger passed up the rectum, the presence of the stone could at the same time be recognised, and its size estimated to be about that of a walnut. On examining the state of his urine, it was found to be alkaline, and to contain large quantities of mucus. I desired him to take nitric acid, with a bitter infusion, and to employ morphia suppositories to check the local irritation. This treatment was continued till the 14th of December, when, his condition being in all respects satisfactory, I determined to operate on him for the removal of the stone, by lithotomy.

On the 16th, with the kind assistance of Professor Miller, Dr Jolly, and my hospital assistant, Mr Esson, I proceeded to operate. On attempting, however, to pass the ordinary lithotomy staff, I found, although the common sound passed easily enough, that it was impossible to carry the staff into the bladder, its curve not coinciding with the altered condition of the canal. I was accordingly obliged to abandon the operation for the time being, contenting myself with freely dilating the sac of the abscess which surrounded the urethra at the site of the old injury.

On the 24th, having provided myself with a staff of the same curve as the common sound, and being again foiled in my endeavour to pass the ordinary lithotomy staff, I introduced the short beaked grooved instrument into the bladder, and at once came in contact with the stone. In performing the operation I had the staff first held in the ordinary position, perpendicular to the surface of the abdomen, but having divided the textures till I felt that the urethra alone intervened between my finger and the instrument, I had it then depressed till it became parallel with the abdominal surface; and now entering the knife-point in the groove, I carried it onwards till it was arrested by the termination of the channel.

Introducing the finger along the staff into the bladder, the instrument was withdrawn, and I immediately felt the stone lying behind the prostate. On introducing the forceps and seizing the stone, it proved friable, and the portion seized came away in the grasp of the blades. The remainder of the calculus, composed of phosphates, loose and spongy in its structure, and excessively friable and soft, was completely removed by means of the forceps. The bleeding, which had been pretty copious during the operation, now ceased. The tube was introduced, and the patient laid in bed. For an hour after the operation, my most attentive and diligent pupil, Mr Esson, stayed with him lest any serious bleeding should occur. When he left, however, there had been no hæmorrhage worthy of observation.

In the evening I was summoned to see the patient, as bleeding had recurred. On cleaning out the clots by which the wound was distended, a gentle ruddy oozing was still visibly going on; and as the patient had apparently lost a considerable quantity of blood, I

deemed it expedient to plug the wound. This appeared to stop the bleeding for the time being, but in two hours it again came on with renewed activity; and as the patient was threatening to sink from loss of blood, it became obvious that something efficient must be done to save him. With Professor Miller's help I cleaned out the wound, and found that the current of blood came from the prostatic level. I therefore proceeded to plug the wound with lint soaked in the solution of perchloride of iron. This having been effected, the bleeding stopped.

25th December.—There has been no recurrence of the bleeding. To have brandy and beef-tea in small quantities, as he can take it.

28th December.—I removed the plug of lint and the tube. The deeper part of it adhered firmly to the tube, and constituted a mould of the wound hard as wood.

Since then all has gone on satisfactorily, and the wound is now nearly healed. A No. 8 bougie readily passes into the bladder.

The points of chief importance in this case are,—

1st, The complete rupture of the urethra, resulting from the injury, so that one end—the posterior—had completely retracted from the other.

2d, The torn artery of the bulb continuing to bleed, so as to form a large sanguineous tumour beneath the perinæal fascia, and the continuance of the hæmorrhage, after free incision, requiring the ligation of the vessel. In a case which came under my care, several years ago, in which a young lad of seventeen fell stride-legs over the margin of a plank of wood, a like result ensued, requiring incision and deligation of the artery of the bulb close to its point of emergence from the obdurator fascia.

3d, The formation of a calculus. This, I presume, was due to the collection of blood-clot in the bladder during the first bleeding, when coagula were discharged from the catheter.

4th, The influence exerted by the calculus in the bladder in maintaining the perinæal irritation and patency of the fistula in perinæo.

5th, The choice of lithotomy rather than lithotrity. The recent formation and loose structure of the calculus obviously favoured the latter, which, however, the irritability of the urinary organs and the contracted state of the urethra absolutely negatived. A farther peculiarity was, the mode in which the circumstances of the case required that the lithotomy operation should be performed; the procedure, in fact, closely resembling that suggested and practised by Mr Aston Key.

6th, The recurrence of the profuse bleeding after the operation coming from some vessel or vessels upon the prostatic level, possibly normally existing there, but enlarged to take up the function of the previously obstructed artery of the bulb, possibly the dorsal artery of the penis taking this unusual route.

7th, The satisfactory results accruing from the employment of the perchloride of iron in the plugging of the wound.

Part Second.

REVIEWS.

On the Parasitic Affections of the Skin. By T. M'CALL ANDERSON, M.D.; Physician to the Dispensary for Skin Diseases, etc., Glasgow. London: Churchill. 1861.

A Practical Treatise upon Eczema, including its Lichenous, Impetiginous, and Pruriginous Varieties. By T. M'CALL ANDERSON, M.D., etc., etc. London: Churchill. 1863.

THE subject of skin diseases is one which is regarded with much disquietude by most medical students, and even by many practitioners. The list of diseases is so long, and the number of varieties described is so great, that the student becomes disheartened, and unless he have opportunities for pretty extensive practical observation, he gives up the study in despair. Much has been written regarding the classification of skin diseases, but the system almost universally adopted in this country is still that of Willan and Bateman, with certain modifications. This system, which is founded on the anatomical characters of the eruption, has the merit of much apparent simplicity, but it has the great defect, as a scientific classification, of grouping together diseases which are entirely dissimilar. It is in fact a purely artificial system, which is to Dermatology what the Linnæan system is to Botany; though, if kept in its proper place, it is capable of considerably facilitating diagnosis. Natural classifications, though no doubt superior, have the disadvantage that they are comparatively useless to the beginner, as their application presupposes a considerable knowledge of the subject. The most recent of these is that of Dr Hardy, of the Hôpital St Louis, Paris, who distributes skin diseases under the ten following natural families or groups:—1. Macules and Deformities; 2. Local Inflammations; 3. Parasitic Diseases; 4. Eruptive Fevers; 5. Symptomatic Eruptions; 6. Dartres or Tetters; 7. Scrofulides, or Strumous Eruptions; 8. Syphilides, or Syphilitic Eruptions; 9. Cancers; 10. Exotic Diseases. To enter into a detailed examination of classifications would occupy too much space; we would therefore refer our readers to an able paper on the "Theory and Classification of Inflammations of the Skin," by Dr A. B. Buchanan of Glasgow, which appeared in the January Number of this Journal for 1863. Dr Anderson is Dr Buchanan's colleague in the Dispensary for Skin Diseases, and comes before the profession as the author of two treatises on important branches of the subject.

The first treatise is devoted to the consideration of the Parasitic Affections of the Skin. These are divided by Dr Anderson into groups according as they are due to the presence of a vegetable or of an animal parasite. Under the first group are included, I. Favus; II. *Tinia tonsurans*, which, according to Dr Anderson, comprehends three varieties, *Herpes circinatus*, *Sycosis*, and *Herpes tonsurans*; III. *Alopecia areata*; IV. *Pityriasis versicolor*. Each of these diseases Dr Anderson regards as dependent on the presence of a distinct parasite; he differs, and we think with justice, from Hebra, who believes that they are all produced by the same fungous growth, and that the various affections named are only owing to the quantity of the parasite deposited, the stage of its development, and the particular structure of the skin attacked. The second group comprehends the diseases which are due to the presence of an animal parasite. These are two in number:— I. Phthiriasis, occasioned by the presence of lice; II. Scabies, or Itch, occasioned by the *Acarus scabiei*. The description given by Dr Anderson of the diseases in question is very clear and practical, and though we cannot follow him throughout the details of his subject, we may allude to his opinion on one or two important subjects.

With regard to the cause of favus, Dr Anderson is decidedly of opinion that it is due to the inoculation of the spores of the parasite. There is no doubt that the spores of many fungous growths are floated about in the air, and as soon as they are deposited in a suitable locality, germination takes place. Youth and a scrofulous habit are favourable to the development of favus, but the great predisposing cause is dirtiness. Dr Anderson's conclusion is thus expressed:—"It will be seen, therefore, that I consider the application of the parasite either by contagion, by inoculation, or by transmission through the air, to be the only exciting, and dirtiness (especially in children) to be the sole predisposing cause of this loathsome and hitherto incurable disease."

In the treatment of favus very numerous means have been employed, but in general with but little success. In many systems extraction of the hairs has been considered the most important point, and we extract from Dr Anderson's work the following description of the *calotte*, which is still employed in many parts of France.

"This consists of a plaster, which is prepared in the following way:— 'About four ounces of rye-flour are mixed with a pint and a half of white vinegar in a pan, this is then put on the fire, and the mixture stirred continually; to it, when it boils, is added half an ounce of the carbonate of copper in powder. The whole is then boiled for an hour, after about which four ounces of black pitch, six of Burgundy pitch, and four of resin are added; when thoroughly mixed and melted, about six ounces of antimonial ethiops are put in, and the mixture is stirred continually till it has assumed a suitable consistence. This plaster is then spread upon strong cloth.' It is employed thus:—The hair is cut as short as possible, the crusts removed by means of

cataplasms, and the plaster applied in strips so as to fit the head accurately. It is left on for a few days, so that the hairs in growing become firmly adherent to the plaster. The end of each strip is then seized and suddenly and forcibly removed, dragging along with it a number of the hairs. This operation is repeatedly performed, and extends over a period of several months in many cases. The practice has sometimes proved successful; but only so when, by it, the whole of the diseased hairs are removed; but unfortunately, in many cases, this cannot be accomplished, and in too many others the operation is too painful and cannot be borne, and instances of death from this cause have been recorded."

The treatment recommended by Dr Anderson, is that which has been successfully employed by Bazin and Hardy at the Hôpital St Louis, its object being the destruction of the parasite which is the presumed cause of the disease. It is carried out in the following manner;—the hair is first cut short, and the crusts are removed by means of poultices. Bazin recommends the application of oil of cade to the scalp, stating that it deadens the sensibility of the surface, and facilitates the extraction of the hairs. It is, however, doubtful, whether the oil of cade have any real effect. Depilation is then commenced. This is most conveniently performed by means of forceps about three inches long, with a weak spring. Three or four hairs are seized at a time, and are extracted in the direction of their axes, care being taken that they do not break across. At the same time as depilation is carried on, a parasiticide should be applied, which penetrates the hair follicles, and comes in contact with any spores which remain. Of the parasiticides, corrosive sublimate is one of the best; the proper strength is two grains of the salt to an ounce of water. Sulphur, or turbith mineral in the proportion of from half a drachm to a drachm in an ounce of lard, or an ointment containing oil of cade, is also useful. The period during which the treatment must be carried on depends partly on the extent of diseased surface; partly on the degree of tolerance of the patient; and partly on the size of the portion of scalp which can be cleared daily: in general, however, it extends over from six to eighteen weeks. If the hairs grow in unhealthy, the process of depilation must be repeated.

While Dr Anderson attaches the highest importance to the local treatment of favus, he does not neglect the state of the general health of the patient, any deviations from which must, when possible, be corrected.

Passing over the other diseases occasioned by vegetable parasites, we shall give two extracts from Dr Anderson's account of scabies, the first refers to the diagnosis of the disease:—

"The *diagnosis* of scabies should in general be quite simple. When a person comes to us with pruriginous eruptions on the belly, inner parts of the thighs, and front of forearms—a well-marked eruption of ecthyma on the hands, and complains of itching becoming intolerable at night, we can say to him, without further examination, that he is affected with scabies. I had occasion the other day to see a boy who had a pruriginous eruption of this kind, and round red spots on the hands, which I recognised as the remains of ecthymatous pustules.

He told me that he was troubled with itching at night, and it was quite easy, without further examination or questioning, to diagnose the case to be one of scabies modified by treatment. In the female, the appearance of vesicles, or papules, or excoriations, or eczematous eruptions on the nipples, is very characteristic as confirmatory of scabies, and papules or pustules on the penis of the male. Ecthyma on the hips of an infant is always a suspicious circumstance, and the state of health of the nurse should at once be investigated.

"We can, then, from the eruptions produced by the scratching alone, diagnose scabies at once, when these are well marked. But if there is any doubt, an examination will usually detect the furrows or cuniculi of the insect from which the female can be extracted. Even the remains of a cuniculus, such as I have described (see Chapter xii., p. 129), is, to the accustomed eye, almost pathognomonic. It is best to look for the cuniculi on the hands, or in the male on the penis, where, when present, they are very easily detected."

The treatment of scabies is thus described:—

"In healthy adults, such as one frequently meets with amongst the working classes, whose skins are coarse and not over-sensitive, who are not subject to cutaneous eruptions, such as eczema, and in whose cases the secondary eruptions produced by the scratching are not very severe, the treatment recommended by Hardy, the most rapid and the most effectual in killing the acari, may be put into practice. The whole body of the patient is first of all thoroughly scrubbed with good black soap, and this process should be continued for half an hour. He is then put into a warm bath and kept there for half an hour also, after which the whole body is rubbed over with the following modification of the pomade of Helmerich:—

R. Subcarbonatis potassæ,	.	.	.	3j.
Sulphuris,	.	.	.	3ij.
Axungiæ,	.	.	.	5xj.

The next morning the patient takes a warm bath to remove the pomade, and the cure is complete as regards the destruction of the acari, while the secondary eruptions soon disappear. The genuine pomade of Helmerich is one-third stronger, but it is rather too irritant. The potash in the black soap and in the pomade, acts as a dissolvent to the epidermis, thus allowing the sulphur to come into more immediate contact with the acarus, while at the same time, it is an irritant to the insect. The warm bath is of service in washing off the black soap and dirt, and in causing the removal of the softened epidermis. Patients in private practice will often be intolerant of this kind of treatment, and it is besides quite inapplicable to children and females, and to men who have delicate skins, as well as to those who are subject to constitutional affections of the skin. In these cases we must use milder means, although the destruction of the parasite is a slower process. It is better, however, to proceed slowly and surely, than by means of powerfully irritant treatment, to kill the acari at once, and at the same time to produce eruptions which may last for months. Under these circumstances the patient should clean himself thoroughly in a warm bath with ordinary (being much less irritating than black) soap, and then the lotion recommended by Vleminckz, of Belgium, with which the Belgian army is treated, should be applied. It is the following:—

R. Calcis,	.	.	.	3ss.
Sulphuris,	.	.	.	3ij.
Aquæ,	.	.	.	3viii.

Boil and stir constantly till a homogeneous mixture is produced, then pass it through a sieve. This quantity is more than sufficient for one person. Some of it should be rubbed into the skin, but not too roughly, and it is much less irritant than Helmerich's ointment. The application is to be repeated every night for several evenings, and the parasite dies without secondary eruptions being produced.

"Hebra's modification of Wilkinson's ointment is a very good one, especially so when the person affected is predisposed to eczematous eruptions, or where the scratching has already brought them out. It is the following:—

R. Sulphuris.				
Olei fagi, āā	.	.	.	3vj.
Saponis viridis.				
Axungiae, āā	.	.	.	lb.j.
Cretæ,	.	.	.	3iv. M.

"In this preparation the potash in the black soap acts, as before stated, as a dissolvent to the epidermis and the chalk in removing it mechanically, the tar counteracts the tendency to, or cures the existing eczema, and the sulphur destroys the acari. This ointment should be well rubbed in, after the skin has been prepared for it by cleaning the body with common soap in a warm bath. The patient may either wash off this ointment soon afterwards, or may leave it on over night and wash it off in the morning, in which latter case the cure is more rapid. In either case, however, more than one repetition of the above process is generally necessary to effect a cure.

"When females or others with delicate skins are affected, and when the smell of sulphur is objected to, sulphur soap may be used, which is nicely scented, and the disagreeable odour concealed. The body should be scrubbed every night with it, in a warm bath. This is the mildest of all the methods of treatment, and requires to be frequently repeated to effect a cure."

Dr Anderson's second treatise, which is devoted to the subject of Eczema is, in some respects, even more interesting than the former; for, while the former gives a good account of parasitic diseases in conformity with the views of most dermatologists, the latter is based upon a doctrine which is new in this country. It has been universally taught here that the elementary lesion of eczema is a vesicle; that of impetigo a pustule; that of lichen or prurigo a papule. These diseases, according to the classification of Willan and Bateman, are arranged under different heads. Dr Anderson, on the contrary, agreeing with the views of Hebra, makes the following important statements:—

"To return to the subject of eczema, I feel pretty confident that those who study this disease carefully at the bedside, without bias, will be forced to the following conclusions:—

"1. That the elementary lesion of eczema is not of necessity a vesicle.

"2. That it may be an erythematous state of the skin, a vesicle, a pustule, a papule, or a fissure.

"3. That impetigo, lichen, and prurigo are merely varieties of eczema, in which the elementary lesions are respectively pustules and papules.

"4. That cases of eczema are often met with, in which an erythematous state of the skin, vesicles, pustules, papules, and fissures, are met with in a combined form."

No doubt this at first seems somewhat startling; but, after carefully studying Dr Anderson's arguments, we are inclined to go along with him in his conclusions. We all know how different skin diseases run into one another, and how difficult it is in many cases to determine the elementary lesion. The name Eczema

Impetiginodes, which occurs in almost all treatises, indicates how difficult it is in many cases to determine whether the eruption is vesicular or pustular. There can be no doubt that eczema, impetigo, and lichen, are closely allied, and it is a great defect of an artificial classification that they have been so widely separated. We believe that the pursuit of this line of inquiry, taken up by Dr Anderson, will result in a greatly enhanced simplicity of our dermatological arrangements.

Dr Anderson's account of the elementary lesions of eczema in the wider sense, and of its symptoms and diagnosis, is very full and interesting. We must, however, pass on to a brief consideration of the treatment recommended.

The *constitutional* treatment is generally important. Any derangement of the digestive organs must be attended to, and, in particular, purgatives are often indicated. For this purpose, gray powder with rhubarb, calomel, or sulphur with cream of tartar, are frequently useful. In many cases, especially of children, tonic treatment, and the administration of cod-liver oil, are sufficient of themselves to effect a cure. The diet must in all cases be carefully regulated; it should consist of mixed animal and vegetable food; the use of spices, pickles, wine, and spirits, should in most cases be suspended. Arsenic is useful in many cases; it does little good until symptoms of its physiological action have been fairly established. The following rules apply to the use, not only of arsenic, but of other alterative remedies:—

"1st, Let the dose, at first small, be gradually increased till the medicine disagrees, or till the disease begins to yield, and then let it be gradually diminished.

"2d, If the medicine disagrees, do not omit it altogether without very good reason, but try it in smaller doses, or in another form, or omit it for a few days, till the bad effects have passed off.

"3d, To give it a fair trial, it must be continued for a considerable period of time, because in some cases the eruption does not disappear till after it has been administered for many weeks.

"4th, Do not permit the patient to give up taking the medicine till some weeks have elapsed since the complete disappearance of the eruption."

The *local* treatment of eczema is even more important than the constitutional. The crusts are, in the first instance, to be removed by means of a poultice, composed of crumb of bread and hot almond oil. If the affected surface is much inflamed, and if the patient complains of burning heat, a poultice of cold potato starch, on the surface of which a little powdered camphor has been sprinkled, will give much relief. When the disease becomes chronic a different line of treatment must be adopted. For the removal of the infiltration of the skin, which so generally accompanies eczema, Dr Anderson strongly recommends treatment by means of potash applications. These are much employed by Hebra,

and Dr Anderson states that Dr Buchanan and himself have adopted them with great success at the Dispensary for Skin Diseases, Glasgow. The strength of the application varies with the amount of infiltration and the extent of the eruption. Where the infiltration is slight or the rash extensive, common potash or black soap may be employed. In other cases, solutions of potassa fusa, varying in strength from two to thirty grains to the ounce, may be used. When there is much itching, lotions containing dilute hydrocyanic acid give much relief. Tarry preparations are of great value in the declining stages of eczema, when the infiltration and itching are moderated.

The remainder of the work is devoted to the local varieties of eczema, and contains much interesting matter.

In taking leave of Dr Anderson, we have to express our high sense of the value of his labours, and the hope that we may soon meet him again in the same branch of inquiry.

An Essay, Historical and Critical, on the Mechanism of Parturition. By WILLIAM LEISHMAN, M.D., etc. etc. London: Churchills: 1864.

THERE is no part of medicine which, in our opinion, presents a finer field for the original investigator than "mechanism." A great deal is done in surgery and midwifery by machinery, and in this department there can scarcely be said to be great lack of ingenuity displayed by surgeons and obstetricians. But in the department of the illustration or explanation of natural and morbid processes by mechanical laws, there is undoubtedly a great vacuum waiting to be filled up, a vacuum that has preliminarily to be largely increased by the cleansing of the rubbish with which imperfect investigations have encumbered it. We can promise to any one thoroughly versed in mechanical science, who will direct his powers to medicine, an easy harvest of original discoveries and of glory. Hitherto, few well qualified have undertaken the task, and the few are to a great extent old authors, who laboured under the disadvantage of the great imperfection of collateral inquiries.

The department of obstetrics has received great illustration from the light of the laws of physics. In its vanity it has prematurely assumed for one of its departments the grand title of the "Mechanism of Parturition." Were a mechanical philosopher to read this name he would be grossly deceived. He would fancy that a physiologist had made physics available for the elucidation or explanation of the phenomena observed by the obstetrician, so far as they were so explainable. He would justly expect this; but if he perused the books or chapters of books so entitled, he would find that only a few corners of the great topic had been entered upon. Parturition is, in the main, a mechanical process; and almost every

statical or dynamical condition in it must be explained, partly at least, by physical laws, by showing its mechanism. But the name of "mechanism of parturition," as almost invariably used, is applied to a nearly naked statement of the position of parts of the fœtus, especially of the head, relatively to the tunnel which it permeates. This naked statement is, of course, a necessary preliminary to a description of mechanism, but it does not deserve that name. The position of parts of a machine is not an explanation of its mechanism. The disposition, as on a map, of an army in battle-array is not an explanation of the plan of the battle. So the mechanism of parturition is as yet merely in a skeleton state, with very little flesh and blood around it; but it is, we think, ready to be clothed, could a zealous obstetrician be found, knowing mechanical philosophy.

Dr Leishman of Glasgow has written a book on what is now called "The Mechanism of Parturition." His book is the first separate original work published in Britain on this topic. It has earned for its author, and for the school to which he is attached, much credit. Looked at from every side, it is a well executed work, and the publisher has done the author full justice.

The great names in obstetrical mechanism are Ould, Saxtorph, Solayres, and Nægele. To these Baudelocque may, with much show of justice, be added. For he not only was the great divulger of the observations of Solayres, but lent his great name as a systematic writer on midwifery to the advancement of this subject. It is Nægele, however, who at present holds the first rank as an exponent of the mechanism of parturition. His essay first produced in Muller's Archiv, and republished in various forms and languages, is the present text-book on the subject. Around him have appeared a buzzing host of critics and commentators. In this country his name has enjoyed power to the full, and his doctrines have for the most part received unqualified support. His authority has on various minor points been more questioned abroad than at home. But now appears Dr Leishman with a carefully considered book, whose great object is, not to push Nægele aside, but to call him in question on various points, and to try not so much to supplant his views by better, as to advance the subject by original research, or to make use of the labours of his contemporaries with this end in view.

The mechanism of parturition is, as we have already remarked, in a very embryonic condition. In accordance with this circumstance we find Dr Leishman devoting his book chiefly to subjects which are preliminary, yet essential to the comprehension of mechanism. We have yet to complete our description of the machine at rest, and this is essential to a just comprehension of its working. Nægele starts the machine with a lateral bend in the long axis (at the neck) of the body to be propelled. Leishman embraces the view that, as the machine starts, the long axis of the child has no such bend. The mechanical difference here is very great, and

the matter is deserving of careful observation and discussion. Who is right? For ourselves, we cannot support Nægele. He distorts the child's neck by lateral flexion for no good end. It is advancing at this stage along a straight part of the pelvic canal, in a direction coinciding with its own axis. He offers no explanation of how the lateral flexion is produced. It must have a cause, and the only conceivable one is too absurd for credence. It may be imagined that the child spontaneously or automatically distorts its own neck! He seems to forget that lateral flexion at this point would increase mechanical difficulty, and be inconsistent with other mechanical arrangements. He only cites observation in his support, and he is a good observer; yet his opponents, respecting his character and his observations, hesitate not to affirm that here he has observed badly, that he has fallen into error, and they explain very well the sources of his mistake. We have cited this question between Nægele and others, to show to our general readers where we still are in the mechanism of parturition, to show that we are still only building or contriving the engine, so far are we from the real working or mechanism of it.

Even as it now stands, this study offers invaluable gains to the practical obstetrician. At the bedside the scientific will be easily superior to the empiric. The former must press on and hasten the perfection of these favourite studies which ennoble obstetrics, emancipate its practice from being a mere trade, and give life and beauty to a department of medicine which is too justly associated with tediousness and disgust. All who are to be good obstetricians must take delight in the study of the mechanism of parturition, and peruse this little book.

We hope to meet Dr Leishman again in this field, and he must himself be well aware how much more he might do. Before concluding this notice, we say one word to prevent our readers from supposing that, in all the questions raised by our author, we take his side. Neither must we be held as thinking that Dr Leishman has given a complete historical view of his subject. Under this head we beg to refer him to some papers published, in the last decade, in the Transactions of the Belgian Academy of Medicine.



Des Eaux Publiques et de leur Application. Par M. GRIMAUD DE CAUX. Paris, 1863.

THIS is an octavo volume, on water, of 350 pages. It is divided into two parts,—principles and their application. It is in the latter half that M. Grimaud shows his full strength.

Ab-o-hawa, water and air, is the Hindustani word for climate; and while we remember the importance of pure air, we very often neglect the means of securing pure water; indeed, these two

elements of a healthy climate often stand in an inverse ratio to one another—where the air is purest the water is often worst. The work of M. Grimaud places this point in a striking light. He has a great dislike to well-water; and his remarks, with a little adaptation, apply to our Scottish farmhouses, where there is generally a well, not very far from the stables, pigsties, or *midden*, which drains the surface water from a much wider circumference than the good folks dream of, and supplies them with water often charged to a dangerous degree with putrefying matter. Hence, now and then we hear of dismal epidemics of continued fever appearing in a farmhouse, and the doctor ought then (if he have not done so before) to impress upon his not very impressible patients, that it is not sufficient for farmers to have removed the dunghills from under their windows, while they imbibe a diluted tincture of the same in the water. Moreover, our author remarks that the ordinary pump-well exhausts the free air on the surface of the water, which is often renewed at the cost of that held in suspension by the water itself. M. Grimaud roundly asserts that the people in Padua do not live so long as those in Venice because they drink well-water. Parent de Chatelet has shown that water drawn from one or two yards below the soil contains a notable quantity of vegetable matter in solution, the decomposition of which is a frequent cause of miasmatic fever, and a most dangerous ingredient in ordinary drinking water. Its tendency to putrefaction may be removed by boiling.

M. Grimaud quotes some interesting observations from a great variety of memoirs and scientific periodicals. M. Rigaud, at Scanyano, a malarious district, by an ingenious arrangement of pieces of glass sloping over one another and converging towards a funnel, succeeded in collecting two bottles of dew. The question whether the malarious poison was contained therein seems to have been decided in the affirmative, and the following are the results of a chemical analysis:—

“1st, The water is clear and colourless, but, on being shaken, shows flakes diffused through it.

“2d, It has a slightly sulphurous odour, like that of white of egg, when boiled.

“3d, The only re-agents which were found to act upon it were the nitrates of silver, mercury, and lead, indicating the presence of a muriate and an alkali. Litmus paper, reddened by an acid, was turned blue by the fluid.

“4th, The residuum of this water had a yellow colour, and weighed, at most, two or three grains. It had a salt taste, blackened at the fire, effervesced slightly with acids, gave a yellowish precipitate with the nitrate of silver; part of the precipitate dissolved in nitric acid, the residue becoming white.

“The water then contains—

“1st, Some animal matter, the greater portion of which separated in flakes while in the bottle.

“2d, Ammonia, or volatile alkali.”

(Annales Cliniques de la Société de Médecine pratique de Montpellier, tome xliv. page 286).

M. Grimaud does not forget our commercial capital, and notices with admiration that "in the houses of the wealthy, one finds a water-closet on every storey, and a shower-bath,—a species of cold rain which produces a salutary reaction, on account of the humidity of the climate." His remarks on the supply of drinking water in Venice, the chapters on the filtration and distribution of water to large cities, and on Artesian wells, show all the clearness and skill of a writer who has frequently employed his pen upon the same subject. The scientific reader may find much he already knows, but he will light upon something that is new to him, and may rest assured that he has received the latest information upon the subject.

The Second Step in Chemistry, or the Student's Guide to the Higher Branches of the Science. By ROBERT GALLOWAY, F.C.S., etc. Churchills: 1864.

THIS book is, as its title implies, an elementary treatise on physical and theoretical chemistry. There has long been a want of a book which, without entering into a detailed account of the facts of chemistry, would afford to the student a means of becoming acquainted with the leading generalizations of the science. The knowledge which a student acquires from hearing a course of lectures, or from perusing one of the shorter text-books, is not sufficient to enable him to read original memoirs in the scientific journals with pleasure or profit. He must learn the language in which these memoirs are written, and it is not the language of the text-book or the lecture. We therefore welcome the appearance of a book which professes to supply this desideratum, and which seems so well adapted to do so.

The "Second Step" is the sequel to the "First Step," published some years ago. In the interval, science has taken a good many steps, and, like most other chemists, Mr Galloway has found it necessary to make considerable changes in his theoretical views. The school to which he now belongs is that founded by Laurent, Williamson, and Gerhardt, and of which the principal living representatives are Professors Williamson, Wurtz, and Kekulé; and the greater part of the book is occupied in explaining the ideas of these chemists as to the nature of chemical reactions.

The author has adopted as his guide, in the arrangement of his subject, the typical classification of Gerhardt, as exemplified in the fourth volume of his "*Traité de Chimie Organique*." He has, however, on some occasions slightly deviated from this system, and we think he might with advantage have done so to a still greater extent. Thus he still adheres to Gerhardt's absurd classification of amidic acids under the type of hydrated oxide of ammonium. This view, which necessarily implies either that these bodies are

compounds of two complete molecules, or that the nitrogen in them is pentatomic, has been rejected by all the leaders of the typical school, who invariably represent these acids on the mixed or intermediate type of water and ammonia. The author has shown, in various passages, that he approves of the theory of mixed types, and it is surprising that he has not applied it in this case, which is, perhaps, of all others, that to which it is most appropriate.

The facts and theories treated of are in general concisely and clearly stated. We have, however, observed a few inaccuracies and inconsistencies. Thus, at pp. 253 and 393, zinc and tin are represented as monatomic; while at p. 281 zinc is classed among the diatomic, and tin among the tetratomic elements. At p. 282 we find iodine and gold among the monatomic elements, in spite of the existence of the chloride and acetate of iodine, and the well-known double chlorides of gold and the alkaline metals. At p. 403 we are told that "each tetrachloride has a corresponding bichloride." The chlorides mentioned are SnCl_4 , TiCl_4 , CCl_4 , and SiCl_4 . It is scarcely to be supposed that the author regards C_2Cl_4 as the bichloride of carbon, but we do not know any other substance to which he can refer. These slight inaccuracies do not, however, diminish the general usefulness of the book, as no one who has read it at all carefully could fail to remark them for himself.

The opinions of the author seem to have varied to a certain extent during the composition of the work. Thus, at p. 162, he says, "Numerous facts are opposed to Schaffgotsch's hypothesis,¹ and therefore no value is attached to it;" and at p. 470, "The new system of atomic weights," proposed by Wurtz and Cannizzaro, and adopted by Mr Galloway, "is in harmony with the law of isomorphism, which requires that isomorphous bodies be represented by analogous formulæ."

In a foot-note at page 226, a sharp line of demarcation is drawn between the amides and the amines, and a different constitution is suggested for the two groups; while at p. 420 we are told that "the division of the ammonia derivatives into *amines* and *amides* is essentially artificial,—there is, in fact, a gradual transition from the one group to the other."

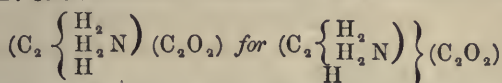
We shall perhaps be accused of excessive purism if we object to the introduction of new barbarous terms into the language of chemistry. We may not be able to expel "bibasic" and "quadribasic," but we may surely prevent the naturalization of "biatomic" and "teratomic."

Mr Galloway has greatly increased the value of his treatise to the student, by appending to it a statement of the views held by some of the more eminent chemists of different schools from his own. Thus we have tolerably complete accounts of the theories of

¹ Count Schaffgotsch, in order that isomorphous substances might have similar formulæ, proposed the same atomic weights to which Wurtz and Cannizzaro have since been led by totally different considerations.

Professors Playfair, Frankland, and Kolbe. It is almost to be regretted that this part had not been extended so as to include the novel and interesting speculations of Kekulé, Erlenmeyer, and Boutlerow, particularly as these have not yet, as far as we know, been published in English.

The book is on the whole carefully printed. Among the numerous formulæ contained in it we have been able to discover only five misprints. P. 520:



and three others of the same kind on the same page. At p. 570 we read, "Ethyl and hydride of amyl are isomeric;" hydride of butyl is obviously referred to.

In proper names and foreign words the accuracy is not so great; thus we have Fridel for Friedel, Perkins for Perkin, Lautermann for Lautemann, Wholer for Woehler, Tusammensetzung and Tusammmentung for Zusammensetzung and Zusammenhang.

It will be observed that we have occupied the greater part of this notice in pointing out blemishes; we consider it a testimony to the excellence of the book that we have been able to find so few, and those of so trifling a nature. We have no doubt that the "Second Step" will be of great use to those who wish to gain a knowledge of the present state of theoretical chemistry, and who, from a want either of leisure or opportunity, are unable to refer to original sources of information. To such we can cordially recommend it.

Elements of Physics, or Natural Philosophy: Written for General Use, in Plain, Non-Technical Language. By NEIL ARNOTT, M.D., F.R.S., etc. etc. Sixth and Completed Edition, Part I. London: Longman and Co.: 1864.

EVERY educated man should have a certain knowledge of physical science; to the medical man such a knowledge is absolutely essential. The functions of the body are in great part under the control of physical and chemical laws, and no progress can be made in physiology without some knowledge of mechanics, hydrostatics, and the other departments of natural philosophy. The various licensing boards, accordingly, either recommend or enforce some acquaintance with physics, and text-books have been published to assist the student in the acquisition of this knowledge. But the great defect of most of these is, that they are too difficult; they presuppose a greater familiarity with mathematics than the majority of students possess; and they are often written in language which itself requires explanation. Dr Arnott's work, the first part of the sixth edition of which is now before us, is admirably adapted to

supply the wants of the medical student or practitioner. Its scientific value is fully testified to by the reputation of the author; while ample proof of its suitability for general use is afforded by the fact of its having rapidly run through five editions; having been translated into the principal languages of Europe; and having been reprinted in North America. The part before us treats of mechanics, hydrostatics, hydraulics, pneumatics, acoustics, and animal mechanics. The principal doctrines and facts of these departments of natural philosophy are clearly stated, in plain language; and we know of no work from which the student will acquire more real knowledge without being constantly embarrassed with technicalities. The second part is promised for October next.

The Prescriber's Analysis of the British Pharmacopœia. By J. BIRKBECK NEVINS, M.D. Lond., etc. etc. London: Churchills: 1864.

IN spite of the caution by the Medical Council contained in the preface to the British Pharmacopœia, and addressed to all medical practitioners, "that, in order to exercise their profession safely, it is incumbent on them to make themselves familiar with the changes effected by the present work," it will, we fancy, be a long time before this end is attained. For a man who has been long in practice, and who has gradually become habituated to prescribe certain preparations of certain medicines, it is a serious matter to discover, on referring to the new Pharmacopœia, that many of his old friends have been omitted, or that their strength and properties have been seriously modified. We can scarcely expect such a man to sit down and study the new work, to compare it critically with the Pharmacopœia to which he has been accustomed, and to commit to memory the changes which have been effected. If he ever do become acquainted with these changes, it must be by a gradual process, and he will find a correct list of them to be a material assistance. Dr Nevins's little work will be of great use to all men engaged in practice. It contains, within the dimensions of a pocket companion, an account of the changes which have been effected by the British Pharmacopœia. There are lists of the substances which have been added or omitted; of the differences between the British Pharmacopœia and those of London, Edinburgh, and Dublin; and of important alterations in strength or composition of preparations which still retain their old names. A very useful table shows the strength and doses of the narcotic preparations; and a series of formulæ illustrate the alterations required in prescribing the new or altered medicines and preparations, by the symbols now employed in the British Pharmacopœia. The work has been carefully prepared, and we can cordially recommend it to our readers.

Part Third.

MEDICAL NEWS.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XXIII.—MEETING I.

25th November 1863.—Dr PATTISON, *President*, in the Chair.

I. ON CARCINOMA OF THE BODY AND FUNDUS OF THE UTERUS.

Professor Simpson said he had once or twice already called the attention of the Society to the occurrence of carcinomatous disease in the body and fundus of the uterus; and he had been induced to do so because of the allegation of Ramsbotham and others, that malignant disease of the uterus always commenced in the cervix, and only extended secondarily to the rest of the organ. He (Professor S.) had already demonstrated the fallacy of this observation, and had related the history of several cases where the disease had originated in the higher segments of the uterus; but he had thought it advisable to bring another illustrative preparation under the notice of the Society, the more especially as he was desirous of directing attention to a symptom which was very distinctly observable in the patient, at whose autopsy the preparation had been obtained, and which had been very marked in most of the cases that have come under his observation. The symptom he referred to was the daily recurrence—usually at a regular hour—of intense paroxysms of pain, beginning, perhaps, slight and intermittent, but soon reaching a high pitch of intensity, at which it continued for an hour or two, and then gradually subsided. Sudden and severe spells of pain of a shooting, lancinating, or “coruscating” character, such as were seen in cases of cancer of the mamma or other organs, and in the more ordinary forms of carcinoma uteri, were often observable also in the cases under discussion, where the disease had its seat high up in the organ; but what he wished to insist on in connexion with the latter class of cases, was this, that in addition to the more indefinite and sometimes merely momentary pangs, the patient at some period or other of her history was also subject to the daily recurrence of the intermittent paroxysms of pain, which sometimes lasted for hours, and might be so intense as to cause the patient to groan continuously, or scream aloud. As to the recognition of such cases, he might state that it had been doubted whether a true diagnosis could be made out during life; and a few months ago, when the two patients whose history he was about to relate, were lying in his ward in the Royal Infirmary, and he was bringing them under the notice of a distinguished English obstetrician, who had kindly come to make the visit with him, that gentleman, after having examined the cervix uteri with his finger, and found it perfectly healthy, said, “But how do you know that there’s cancerous disease inside the uterus in those women?” Well, it was commonly observed in these cases that there was, 1st, a disagreeable watery discharge going on almost constantly, and to an unusual extent. Then, 2dly, there was frequent, and sometimes profuse menorrhagia, which was incapable of being arrested by any of the ordinary medicines or applications and injections into the vagina. With regard to this special symptom, he might state, that on the first occasion when he (Dr Simpson) saw and recognised a case of the kind under consideration, this was the most prominent and distressing of the patient’s symptoms. The lady was the sister of a medical man, and he (Professor S.) was called to see her in consultation with the late Dr Thatcher, who showed the cervix through the speculum free from disease, and was inclined to think there could be no

malignant formation present. A sponge-tent, however, having been introduced into the uterus, the discharge for the first time for many months had been arrested. On the withdrawal of the tent the pent-up fluid had gushed out, and the finger passed through the dilated cervix had felt the interior of the uterine cavity containing a mass of malignant tubercular granulations. In another patient whom he (Professor S.) had seen in the hospital that day, the bleeding had been going on almost daily for twelve months. Then, *3dly*, by means of the sound we could feel the foreign body in the interior of the uterus; and by dilating the cervix with sponge-tents, we could introduce the finger and feel the diseased portion, hard, rough, and irregular, or more soft, fungoid, and friable. *4thly*, Pieces of the morbid texture sometimes passed off and could be scraped off for microscopical examination. And, *lastly*, there was often, but by no means in every case, the periodic recurrence of the characteristic pains to which he had been calling their attention. The cases whose histories he (Professor S.) wished to relate, had been entered in the Infirmary Journal as follows:—

CASE I.—E. W., aged 29, from Whitekirk, Haddington, admitted to the hospital 20th December 1862.

Patient states that, in September 1862, she found her menses increase greatly in quantity, and continue from one period to another,—the discharge being sometimes greater, at other times less, according as she employed means to check it or not. To check the flow, she used cloths dipped in vinegar; but, finding it continue, she was obliged to give up her situation. She was sent to the ward from the Servants' Home as a case of menorrhagia.

On admission, patient complained of a fixed pain in the left side of the belly, as well as of the discharge already mentioned. The sound, when passed into the uterus, entered the full distance, no more. Ordered of *tr. cannabis indica*, 10 drops in water, twice daily.

23d December.—Pain and discharge much increased. Dose of the medicine as above, doubled; and to be repeated thrice daily, which checked the flow.

5th January.—Sore throat, which was treated with infusion of *hæmatoxylon* as a gargle.

8th.—Throat better; gargle discontinued.

12th.—Abdominal pain severe as ever, but discharge ceased. Patient is taking no medicine.

19th.—Patient states that pain comes on periodically at 9 A.M., continues more or less severe through the day, and disappears at night.

22d.—It was supposed some irritating cause was within the uterus; so two sponge-tents were introduced, to dilate the os. When they were both withdrawn, there was separated by means of the finger a small irregular mass of fatty-like matter, some parts of which were tough, and other parts soft, having in it a patch of soft, cheese-like matter. This was pronounced by Professor Simpson to be carcinomatous. Under the microscope, it presented compound granular corpuscles, and others filled with fat.

28th.—Since the last date (22d), patient has felt the sharp stinging pain in the left side of the abdomen and left iliac region much increased. It has been treated by painting with iodine, by liniments of belladonna and glycerine, and by opiates given both by the mouth and rectum.

30th.—Ordered of the following,—*R. Ext. cannabis indicæ*, gr.i.; Quina sulph., gr.ijj., ft. pil.,—one pill, twice daily.

1st February.—Began using belladonna pessaries containing a few drops of chloroform.

2d.—Complained of disordered digestion and vomiting, and was ordered the following,—*R. Bismuth. albi*, gr.iv.; *Pulv. ipecac.*, gr.ss. *M.—Ft. pulv. Sig.* One, twice daily.

11th.—The uterus having been again dilated by sponge-tents, Professor Simpson scraped away some portion of the growth.

16th.—Patient has been relieved of the severe cutting pain ever since the operation. She experiences now only a feeling of uneasiness, and does not

require opiates, pessaries, or draughts. She has been taking for the last three days the following:—*R* Quinæ sulph., gr.i.; *Cerii oxalatis*, gr.i.; *Conf. rosæ*, q. s. *M.*—*Ft. pil. tales* xii. *Sig.* One, thrice daily.

2d March.—Patient continued much relieved till this date, when the *cutting* pains recommenced.

5th.—A sponge-tent re-introduced with some difficulty, as the anterior wall of the uterus is enlarged, and the uterus itself anteverted.

13th.—Complains of great pain, relieved by the use of brandy.

25th.—The cervix having been dilated by two sponge-tents, Professor Simpson removed a portion of a carcinomatous growth.

6th April.—Patient has been relieved of her severe pains by the last operation, and has only complained of uneasiness since. For the last eight days, however, she has not been able to make water without the use of the catheter. Nothing like the former growth is to be found within the os. The hard base, however, on which it was implanted seems to have developed itself into a small tumour in the anterior wall of the cervix about the size of a small egg.

17th.—There is a flat growth, as large as the tip of the finger, at the upper end of the vagina, on the left of the cervix. There are also two nodular growths on the left of the cervix, the size of small shot. The growth, when touched, gives rise to pain. She suffers great pain, which has told lately upon her strength and appetite. Ordered to use min.x. of chloroform in a bottle of soda-water. This gave relief once or twice, but soon lost its effect. Her urine not passing freely through the catheter she is obliged to use, ordered,—*R* *Tr. ferri mur.*, $\frac{z}{i}$ ss.; *Spt. ætheris nit.*, $\frac{z}{i}$ l. *M.*—*Sig.* Forty drops, thrice daily.

4th May.—Patient finds that nothing relieves the paroxysms of pain so much as the injection of a teaspoonful of *undiluted* solution of the muriate of morphia into the rectum, and the internal use of brandy. The anterior wall of the uterus felt from the vagina is enlarged and tender. The os is open, and its lip has a nodulated feel on its right and posterior side.

Ward 12 was closed on the 8th of August 1863, and patient was removed in consequence to Ward 18, where she died on 20th September 1863.

Post-mortem Examination (extracted from Pathologist's Case-book).—On the 21st September 1863, E. W.'s body was examined. The lungs were emphysematous, and the left lung partially adherent. Both contained numerous cancerous nodules, the largest about the size of a bean. The membranes were fatty; spleen natural; liver fatty, and the kidneys natural. Intestines were not examined. The sigmoid flexure was adherent to the fundus uteri, and, in adhesion to it, a large cancerous mass. The bladder was healthy. At orifice of the urethra there was a nodule of cancerous matter. The uterus was much thickened, and its interior was ulcerated, and there was found attached to the fundus a polypus about the size of an almond. The vagina was a mass of cancerous ulcers, and there was a deep excavation in the posterior wall, which was almost perforated. The pelvic and lumbar glands were enlarged, and in them there were deposits of cancer. The mesenteric glands were free from disease.

CASE II.—*M. R.*, aged 50, admitted 29th January 1863. Patient states that she has been ailing since May 1861. For eight or nine months previous to that date she had had little menstrual discharge, till one day, after lifting a heavy weight, a bleeding came on, which was repressed by means of wet cloths in four or five days. In January 1862, the bleeding commenced again without any apparent cause. After having used a wet compress to stem the bleeding, for a fortnight, she felt pain in the hypogastric region, extending from one side of the abdomen to the other, and striking through the body to the back. This pain has continued ever since, and now begins at 12, 1, or 2 o'clock in the day, culminates between 3 and 5 o'clock, and leaves her entirely about 6 or 7 o'clock, unless a second attack is going to come on, in which case she has a remission till 10 o'clock, when the pain returns for two hours. Patient has had no bearing-down pains. The discharge, which, for a fortnight in January 1862, consisted of pure blood, is now water, with a little blood. It has no

odour, and is sufficient in quantity to wet four napkins in the day. The patient is yellow in complexion, and has an anxious look. Her disease *has* been treated, but without success, by the wet compress, sponging with acids, quinine, and Donovan's solution.

On examination, the uterus was felt to be enlarged both anteriorly and posteriorly, but more especially in the latter direction. The sound passes into the uterus three inches. After dilatation by sponge-tents, a slender, long, soft polypus was felt distinctly, depending from the fundus, with another short growth, either part of itself or a distinct polypus, attached anteriorly also on the fundus. On the posterior wall, a good way up, there is a small nodule, which appeared to be about the size of a pin's head.

2d February.—Ordered, $\mathcal{R}$ Ext. belladonnæ, gr.ss.; Pulv. magnesiæ, q.s. M.—Ft. pil. tales xii. *Sig.* One, twice daily.

12th.—The uterus was dilated by two sponge-tents, and Professor Simpson, on making an examination, was led to consider this a case of malignant disease. Ordered patient twenty-five drops, thrice daily, of liq. secal. cornuti.

5th March.—Two more sponge-tents have been introduced, and Professor Simpson thinks that the uterus is somewhat swollen, and ordered,— $\mathcal{R}$ Tr. cannabis indicæ, $\mathfrak{z}$ ii.—*Sig.* Twenty-five drops, thrice daily. Two days after the sponge-tents were introduced, the pain began to abate, and it has been less since.

25th.—Two sponge-tents having been introduced, and the parts well dilated, there was felt at the fundus of the uterus a growth resembling half a marble, at the side of which there were some ragged tufts. This mass Professor Simpson scraped away.

6th April.—Patient has suffered a great deal of pain lately. It comes on, as before, periodically, about the middle of the day, and lasts through the afternoon, and more or less through the night also. Chloroform had been used to lull the pain for two or three days, but, as it made her sick, and interfered with her appetite, it was discontinued.

16th.—Ordered to use chloroform in a bottle of soda-water (min.x.). This caused some relief, but was followed by sickness.

17th.—Dismissed to-day, as her cries were injurious to the other patients, and as there was no prospect of giving her relief.

Three or four other cases of a precisely similar nature, and presenting the same train of symptoms, had come under his (Professor Simpson's) observation in private practice within the last six months, and if he had had time to look over the pages of the Infirmary Journal, he believed there would be found a record of some other cases besides those he had cited. But he thought the histories he had related brought out distinctly enough the general characters and course of the disease, and would serve to indicate the importance of the special symptom to which at the outset he had alluded. He had seen similar intermittent, periodic pains in one single case, where the patient was not affected with cancer of the interior of the uterus, and in that instance there was a hard foreign body in the cavity of the organ, resulting from the calcareous degeneration of a fibroid tumour of the submucous variety. He had also seen paroxysms of pain approaching in character to those seen in cases of internal cancer of the uterus, in two or three instances of retention of fluid in the cavity of the uterus from occlusion of the os,—in fact, in dropsy of the organ; but, except in those rare and isolated cases, the symptom he had tried to describe was only to be met with, so far as his observation went, in patients who were suffering from carcinoma of the body and fundus of the uterus.

Dr Keiller had also observed this symptom in cases of malignant disease of the interior of the uterus, and suggested that perhaps it might be due to the presence of a foreign substance inside the uterus, which at all times is of a hard and rigid texture, and in these cases is unusually indurated.

Dr Alexander R. Simpson gave some particulars as to the history of one of the patients referred to by his uncle, and stated that the presence of the peculiar periodic pains, taken together with the long-continued menorrhagia,

and the cachectic appearance of the patient, had led him (Dr A. R. S.), when he first saw the patient, to form the diagnosis which had that morning been confirmed by direct digital exploration, that she was suffering, viz., from carcinoma in the interior of the uterus.

II. INDUCTION OF PREMATURE LABOUR.

Dr Moir wished to bring before the Society the history of two patients who presented some points of interest in connexion with the induction of premature labour :—

CASE I.—Mrs M. had been confined of an illegitimate child in the Maternity Hospital about five years before; and, as the brim was very narrow, he (Dr M.) had been obliged to deliver her by means of craniotomy. She had subsequently married; and having become pregnant, had come to solicit his professional aid. She had ceased to menstruate on 12th January 1863, and quickened on 20th May. Deeming it unsafe to allow her to go to the full term, he had determined to induce premature labour; and as the deformity was great, he had decided upon operating before the completion of the eighth month. Accordingly, he had begun to dilate the os uteri with his fore-finger on 3d September; this operation being repeated every day, and on the morning of the 9th the liquor amnii escaped, and slight pains supervened in the evening. On the morning of the 10th, regular pains having set in, he had sat by her the greater part of the day watching her progress and assisting the dilatation of the os with the finger; for the head resting upon the narrow brim was not pressed down very effectually into it. Between 7 and 8 o'clock P.M., the os uteri being completely dilated, and the head fairly engaged in the brim, and wishing particularly to see another patient, he requested a young practitioner who lived close by to wait on the case. Having returned soon after nine, he (Dr M.) had found the child born with marks of forceps blades on its face, and the practitioner gone.

CASE II.—The second patient whose case he (Dr Moir) had to notice, had been under his care in several of her pregnancies. On the occasion of her sixth confinement, he had delivered her between the seventh and eighth month of a living child. On the next occasion, he had had to go to Portobello to bring on labour, and left her delivery to the care of his friend Dr Hill. It had so happened that he (Dr M.) had to be in Portobello when her labour was going on, and having looked in to see her, he found a hand down, and with some difficulty turned and brought away a dead child. She had lately come to the Maternity Hospital for her eighth confinement. He had dilated the os uteri as he usually does; and as the head was presenting, and pains going on steadily, he had left the case at night under the care of the house surgeon, giving him special instructions to be very careful in the management of it, for he (Dr M.) believed that in some of these cases the head was very apt to slip aside, and lead to a shoulder presentation. He had been called in the morning, and found that the dreaded accident had occurred. He had then tried to push back the shoulder, but failed. The cord had been compressed for some time, and although turning was effected without much difficulty, the child was born dead.

He (Dr Moir) had brought forward these two cases in order to illustrate two points in medical practice, and one in medical ethics. 1st, He believed that the simplest and safest means of inducing premature labour were those by which the dilatation of the os uteri was effected very slowly and gradually; and the plan he invariably had recourse to was to separate the membranes from within the os uteri by means of the fore-finger, passed within the os internum, and turned round and round within it so as at once to separate the membrane, and slightly to dilate the orifice. All those measures which had for their object the rapid dilatation of the os and cervix uteri, he regarded as very unsafe, and for the vast majority of cases utterly unnecessary. 2dly, He thought it of the utmost importance in these cases to endeavour to get the child to present by the head, and to have it delivered as a head-presentation. The vitality of the premature child was low, and in turning, if any delay took

place at all in the delivery of the head, it was apt to succumb. 3dly, He considered that the application of forceps under the circumstances related in the former of his two cases, had been quite unjustifiable, and that young practitioners should be cautioned against needlessly and rashly having recourse to the use of instruments, when nature was perfectly competent to the completion of delivery, for the sake of gaining a little spurious fame. In that instance, the head was fairly engaged in the brim, the pains were progressing steadily, and there seemed every likelihood that in a couple of hours or so the whole process would be completed. In such circumstances he believed that the young doctor to whose care he had consigned the case, would have shown more regard for the safety of the child as well as for the character of his senior in the profession, by abstaining altogether from instrumental interference, and simply watching the natural process.

Dr Pattison stated that four different patients, in whom he had induced premature labour, miscarried in subsequent pregnancies about the sixth month or so; and he wished to know whether this had been observed by any of the other Fellows.

Dr Simpson had just got a letter from a doctor in the north, stating that a lady, in whom he (Dr S.) had induced premature labour, because of albuminuria, had aborted at the third month. But then this lady miscarried once in a previous pregnancy before she was the subject of induced labour, and he could not recollect that patients in whom he had induced premature labour were more liable to miscarriage, although, most assuredly, it was more easy to bring on labour in cases where the operation had already been had recourse to, than in those where it was being induced for the first time. As regards the use of forceps, he thought their employment in the case related by Dr Moir extremely reprehensible; and the danger of having recourse to them in such premature cases had been very clearly shown in a case of the late Dr Hamilton's, where the tender skull and its contents had been fatally injured by the forceps blades. The method which he (Dr S.) was now mostly in the habit of employing for the induction of labour consisted, as they were aware, in the introduction of a long flexible catheter into the interior of the uterus, between the membranes and the uterine wall, where it was left until the contractions fairly set in,—usually in nine hours or less from the time of the operation. The plan followed by Dr Moir was the most exact imitation of the natural process, where we see the membranes becoming detached from the internal os as the latter becomes pressed on and distended. It was not a plan, however, that could be adopted generally by the profession, but only by those who, like Dr Moir, were possessed of fingers of unusual length, and were much skilled in the use of them.

Dr Keiller thought Dr Moir's cases interesting in relation to the observations of Dr Barnes of London, on what had been spoken of as "the induction of premature labour at a predetermined hour." He (Dr Keiller) had repeatedly, as the Society was aware, employed the air bag for the induction of labour; but he thought its indiscriminate employment was not to be encouraged, seeing that in some cases there was a danger of rupturing the membranes in effecting its introduction, and still more because its use was apt to be attended with displacement of the foetal head. He quite concurred in the opinions that had been expressed as to the impropriety of using the forceps to hasten delivery in such cases,—all the more that they sometimes had the effect of extending the head, and so causing it to be subjected to more compression than it meets with when it descends flexed on the sternum, and thus presenting its smallest diameters to those of the pelvic canal.

III. SUDDEN DEATH DURING LABOUR.

Dr William Ziegler related the following history:—

On the morning of the 7th October 1863 I was called to attend Mrs P., who was in labour with her ninth child. During this, as well as during her former pregnancies, Mrs P. had suffered from symptoms premonitory of an attack of

convulsions, such as pain in the head, giddiness, flushing of the face, ringing in the ears, and more or less confusion, with derangement of vision. These symptoms were *unattended* by the presence of albumen in the urine, and on former occasions had been met by blood-letting, etc. On this occasion she was treated by laxatives and diuretics; and all the alarming symptoms had quite passed away before labour supervened. I may add that during the last twelve months she had been subjected to severe trials and bereavements, which, with the knowledge of her own mother having died suddenly after the birth of her ninth child, had produced a desponding state of mind as to the result of her approaching confinement; and she had more than once expressed to her friends her fears that she would not recover.

On entering her room, I found her sitting up in bed, and suffering from a severe "bearing-down pain." She begged that I would without delay administer chloroform, at the same time assuring me that it always agreed well with her, and that I would not be long detained.

Accordingly, having first anointed the face to prevent the chloroform irritating the skin, I began to give it very carefully, by dropping it on a thin handkerchief placed loosely over the face. Less than two teaspoonsful had been given, and insensibility had not been produced, when a severe pain came on, which caused her to start up in bed, and the handkerchief fell from her face. With my right hand I was engaged examining the progress of the labour, while my left was on the pulse at the patient's wrist. I had asked the nurse to give a little more chloroform, but, in consequence of the violent voluntary efforts which accompanied the uterine action, this was not done. The os uteri was at this time fully dilated, and the membranes broke during the examination. In a moment she fell back unconscious on the pillow, uterine action and voluntary effort instantly ceased, while the pulse disappeared from the wrist, and, after a few deep prolonged inspirations, she died.

By this time the husband had left to seek the advice of Professor Simpson, and the nurse had gone for Mr Sidey, who lived in the neighbourhood, with the view of obtaining instruments to complete delivery. When left alone, the possibility of turning entered my mind; and, although the head had already entered the brim of the pelvis, the soft parts were so relaxed that I had no difficulty in carrying out the practice. The child (a female), though she did not breathe immediately on birth, was easily resuscitated. Four or five minutes might elapse between the death of the mother and the birth of the child.

Death appeared to have been caused by sudden syncope. On post-mortem examination, extensive fatty degeneration of the heart was observed.

Dr Gordon stated, that as regards the possible connexion in this case between the administration of chloroform and the sudden death, he could not see the slightest ground for attributing the death to the drug, any more than in a case of delirium tremens, in which the patient died very suddenly when he was on the way with chloroform in his pocket to administer. He had seen chloroform steady the pulse in cases of heart disease, but never saw anything to lead him to regard it as a dangerous agent when properly employed in midwifery.

Professor Simpson had never seen any occasion to change the views he has already so often expressed as to the perfect safety of the administration of chloroform in midwifery practice. There are probably some contra-indications which we do not yet precisely know; but though among these some forms of heart disease may fall to be reckoned, yet valvular disease of the heart was not in itself always a contra-indication. For, only three months ago, he administered chloroform to a lady during her confinement, and he has administered it in some of her previous labours also, although she has a very loud bruit, and the most distinct symptoms of cardiac disease.

Dr William Ziegler said that he had administered chloroform to a patient whom he had to deliver with forceps, although he knew that she was suffering from mitral disease, and with the most satisfactory results.

IV. COMPLEX LABOUR.

Dr Burton of Walsall contributed the following notes of an unusual case of complicated labour :—

1860, *March 30*.—Called to attend Mrs H., æt. 23, in her first labour. Os uteri fully dilated; head bearing firmly on the pubes. She had been in active labour seven or eight hours. The liquor amnii evacuated. A soft, doughy, inelastic tumour occupied the hollow of the sacrum, from the promontory of the sacrum to within two inches of the vaginal orifice; not sensitive on pressure; no fluctuation; slight lateral mobility, but could not be pushed up with one finger in the rectum and another in the vagina. The patient had not been aware of its existence until I informed her of it, never having felt any inconvenience nor uneasiness from it. Finding her somewhat exhausted from her continued though fruitless efforts, and the pains, though frequent, not strong, I gave her sixty minims of laudanum, which produced two hours' tranquillity. The pains then recommenced vigorously, without effecting any amelioration of the foetal position. I thought proper to attempt turning the child; but in this attempt I was foiled by a strong band of uterine fibres, about an inch and a half thick as felt by the finger, which embraced the child diagonally around the body, across the chest, over one shoulder, and round the other arm below the shoulder, with such firmness as to defy any reasonable attempt to pass the fingers between it and the body of the child. Repeated the opiate, and applied the long forceps, but could not materially alter the position of the head, or get it to enter the pelvic brim by any prudent degree of force. I asked my friend Mr F. A. Edwards to give me his advice and assistance, but our united skill was incompetent to overcome the difficulty; and about 3 A.M., the patient having been fifteen hours in active labour, the parts becoming hot and dry, and a brownish discharge staining the fingers, we considered it our duty to concern ourselves alone for the safety of the mother, and accordingly I broke up the head, and with some difficulty effected the delivery, the patient recovering without a single bad symptom.

1861, *March 12*.—Was called in to a second labour of the same patient, having previously directed that I should be called as early as active labour set in. Labour commenced two hours previously. I found the tumour as before, the os uteri dilated to the size of a half-crown, and dilatable, head presenting on the pubes as before. The os expanded readily. I applied the long forceps, and in about an hour delivered a full-sized, healthy, living child, and all went well afterwards.

1862, *August 2*.—Again called to a third labour in the same patient's case. I found all our old difficulties again present; and after all our expedients were fairly exhausted, as in the first labour, I was compelled to break up the head and deliver. A perfect and rapid recovery of the mother ensued. I was on both occasions assisted by Mr Edwards.

1863, *May 26*.—I was made aware that Mrs H. was again pregnant, having missed her period since the 16th November last. Upon making a vaginal examination, I found the tumour *in statu quo*, but increased in size, and intimated my intention of inducing premature labour about seven and a half months. About the beginning of June, she had some vaginal heat and pain, followed in "two or three" days by a discharge of "blood and matter" per vaginam, which relieved the pain; and as she felt no more of it, she did not at the time mention it to me, but, thinking that the "tumour had broken," she flattered herself that she had thus escaped further trouble. About 20th June, I made an examination, found the tumour larger, and extending up towards the sacral promontory beyond my reach. No cicatrix could be felt in the vaginal wall. The os and cervix uteri inclined forward. The tumour has the feeling of a soft, doughy, inelastic cake behind the vagina, applied over the hollow of the sacrum, with a well-defined border about one inch in thickness at its lower edge, thickening upwards so far as I could reach to two inches perhaps. No fluctuation or inequality of its surface to be distinguished. A recto-vaginal

examination enabled me to seize the tumour between the fingers, but I could not push it upwards materially. No pain was experienced by the patient upon firm pressure being made upon the tumour, which admitted in its lower part of some lateral displacement.

15th July.—243 days pregnant (?) I administered 3ss. doses of ergot, infused in half a pint of water, every four hours, until twelve had been taken; but although some slight uterine action seems to have taken place, nothing like labour pains was thereby induced. I then gave teaspoonful doses of a solution of ergotine, every four hours, up to 8 A.M. of the 16th. Still no material effect, although she has had one or two pains, as if labour was coming on. The os uteri (which was low down, and capable of admitting the point of the finger easily—the head, being distinctly felt as the part presenting before the administration of the ergot) was now^{*} reached with great difficulty, being closed to the size of a large quill, and the foetal movements so much diminished, that the patient inquired if the “medicine was meant to kill the child.” The os uteri was directed towards the pubes. At 11 A.M., with some difficulty I introduced a silver canula, and with a stilette punctured the membranes, and discharged about two pints of liquor amnii in about seven or eight minutes. The upper part of the tumour pressing forward towards the pubis, narrows the vagina, so that it had to be avoided by pressing the finger close to the pubis, in order to reach the os uteri.

In four hours and a half after evacuating the liquor amnii, regular parturient action was established, and at 11 A.M. I was sent for, and found the os uteri well dilated and soft; head at the pelvic brim during each pain, pressed anteriorly, and evidently resisted by something which the head pushed before it more into the pelvic space, causing the part of the tumour felt by the finger to descend into the hollow of the sacrum. At 12.30 I applied the long forceps, and assisted thereby, the head entered the brim, pushing forward the tumour, much flattened, to the os externum, where it seemed to protrude, covered only by the vaginal tissues, whilst the perineum was slid, as it were, backwards. The head here became firmly impacted, during the pain, between the tumour and the pubic arch. In the interval of a pain, I made an endeavour to press back the tumour, and fancy that I succeeded to some extent, as on the recurrence of the pain the head came down on my fingers, and upon their withdrawal the vertex cleared the pubic arch, and our troubles were happily over.

Upon passing the finger into the vagina, the tumour was found occupying its original position, apparently unaltered in size or shape, and painless upon free pressure. The head was much elongated, and the child was comatose, the eyes staring, pupils dilated, limbs flaccid, and the pulsations of the vessels of the funis very feeble. By liberal frictions with brandy and spt. ammon. aromat., a little salt into the mouth, and the “ready method,” a better state of things supervened. The child cried feebly, exhibited some muscular activity, and recovered its almost lost vitality.

I had been fortunate in securing the presence of a good full-breasted nurse, who was kind enough to give the child some of her milk as soon as it was sufficiently recovered to swallow. I had it rolled up in warm flannel without washing, and by the next forenoon it had become vigorous. Still fed on breast milk, and kept warm in the flannel envelopes, it continued to improve, and as soon as the mother had milk, it was enabled to suck, and thus supplied, it has continued to thrive, until this day (11th September) it looks as large and hearty as any full-grown child of its age, with every prospect of so continuing.

During all this labour, and after it, as on the former occasions, the tumour has not caused any sensation of uneasiness from the effects of its being pressed upon, and the recovery of the patient has been as rapid and perfect as in any natural labour.

1863, September 14.—Visited the patient this day. Find that she has lately been subject to nervous attacks, partial faintings, with perspiration. Has now and then pain in the vagina, and on defecation, especially if at all constipated.

Upon a vaginal examination, the tumour is found filling all the hollow of the sacrum down to the cervix, harder than before; and here and there a harder nodule, about the size of a half of a small hazel-nut, is to be felt. The mass is pasty, and free of any sense of fluctuation in any part. Pain complained of upon pressure in several parts of the tumour, but not again in the same part upon repeating the pressure. Heat of the vagina not (to the hand) greater than usual, and its lining membranes secreting naturally. The uterus normal, except that the os is pushed anteriorly, and the whole organ gives, by digital examination, the impression that it is erect, and pushed anteriorly in an erect position. The promontory of the sacrum is covered by the tumour, and therefore probably the larger part is in the abdominal cavity, although its existence there is not made out by palpation. Recommended prone position, and leeches to the interior of the vagina, over the more sensitive part of the tumour.

Professor Simpson thought the Society was greatly indebted to *Dr Burton* for contributing the very interesting paper which had just been read. He (*Dr S.*) had little doubt that the tumour which had so impeded labour was an ovarian one, and only the use of the exploring needle could determine whether it were of the more common type of cystic growth of the ovary, or, as he was more inclined to conjecture, of the type where there was a more solid tumour interspersed with cysts containing stearoid matter. This complication of labour was usually regarded as a very fatal one, and most statistics seemed to show that it was so. But the case before them showed that it might repeatedly present itself in the same woman without leading to any deadly disaster; and he (*Dr S.*) had himself now under his care, in the Maternity Hospital, a patient who had once before had labour induced prematurely in consequence of the presence of an ovarian tumour in the pelvis, and who had returned to have the same operation repeated under the same circumstances.

MEETING II.

9th December 1863.—*Dr GRAHAM WEIR*, *President*, in the Chair.

I. INTRA-UTERINE POLYPUS, COMPLICATED WITH INVERSION.

Dr Keiller related the particulars of an unusual case of the above, concerning which, he had been consulted by *Dr Archibald*, of St Andrews, and on which he had within the last few days operated. The case being still under treatment, he (*Dr K.*) would reserve its more complete history till another occasion, it being now brought forward with the view of eliciting the opinion of the members present, as to the best mode of managing its further progress. The patient, the mother of several children, had suffered from weakening discharges and considerable pelvic discomfort since her last confinement, five months ago. An examination discovered that the vagina was filled by a tumour, the exact nature of which was not at the time very clear. On visiting her, *Dr K.* diagnosed a fibroid tumour attached to the fundus of the uterus, which was completely inverted, and occupied the vagina. *Dr Keiller* removed the tumour by the *écraseur*, and afterwards endeavoured by various means to reinvert the uterus. The attempt was repeated several times, but without success. The cause of the difficulty was the contracted condition of the os uteri, which, hitherto, has resisted all means of dilatation. *Dr Keiller*, however, by having the patient for some time under more immediate treatment, and especially by the gradual use of the caoutchouc dilator, along with other means, hoped to be able yet to reinvert the uterus. *Dr Keiller* exhibited the tumour to the Society; it weighed nearly two pounds, and was evidently of a fibroid nature.

Dr Peter Young reminded the Society of the similarity of this case to one communicated last year by *Dr Keiller*, which occurred in Glasgow, where the uterus was excised, but with an unsuccessful result. The case, however, differed from the present one, in the tumour being within the walls of the uterus.

Dr Alexander R. Simpson approved of the gradual dilatation of the vagina

by the india-rubber dilator. In this way some dilatation of the cervix might be obtained, when reduction could again be attempted.

Dr Graham Weir remarked, that the case was one of extreme difficulty, that it would be necessary to have the patient under personal care for a considerable time, so as to try some very gradual means of returning the uterus to its proper position.

II. SPONTANEOUS INVERSION OF THE UTERUS AFTER DELIVERY.

Dr James A. Sidey's history of this case was as follows :—

A healthy and rather stout woman was delivered of her second child. The labour was natural, and the placenta came away of itself. Upon calling two hours after delivery, he found that an hour or so before, the patient began to complain of slight after-pains; these had increased, and she was then suffering greatly from severe down-bearing pains. Finding some large clots lying in the bed, he introduced his hand into the vagina, thinking to remove some more large clots, but found the whole vagina filled with a large rounded mass. On more careful examination, he could feel the os open to its greatest extent, and a round tumour protruding through it,—this he pushed up—the pains immediately left, and the patient made a good recovery. *Dr Sidey* mentioned the case to the Society to show how inversion may occur spontaneously from the efforts of the uterus to expel clots of blood, and without any violence being used.

III. CASE OF PROTRACTED GESTATION TERMINATING IN PAINLESS AND COMPLICATED LABOUR.

Dr Alexander R. Simpson gave the history of a case of labour presenting several points of interest, which will be found at page 915 of this number of the Journal.

Dr Cochrane thought the method of stimulating the uterus to expel the placenta was no novelty, but he did not consider it was at all necessary, that nature often required time to rally, and is capable of performing her own work.

Dr Pattison remarked that *Dr Clark* of Dublin recommended this practice, and that all practitioners followed it more or less, but not to the same extent as referred to by *Dr Alexander Simpson*.

Dr Keiller feared that it would tend to facilitate inversion, which he considered was caused in many cases by the irregular contraction of the uterus more than pulling on the cord, as in the case related by *Dr Sidey*. He was in the habit of stimulating the uterus, but also employed gentle traction on the cord.

Dr Graham Weir remarked, that practitioners all employed some external stimulus to the uterus, but not to the same extent or in the same manner as spoken of by *Dr Simpson*. He considered that grasping the uterus fairly in the hand was more effectual than mere pressure or rubbing from above; but at the same time, it was better to make use of both hands, and while stimulating with one, to have the other on the cord to know what progress was being made.

Dr Pattison had one time met with a strange case where, after the head was expelled, he discovered a loop of the cord pressed between the hand of the child and its chin. Although the cord was pulsating at the time, the child was still-born.

MEETING III.

23d December 1863.—*Dr WEIR, President*, in the Chair.

I. CÆSARIAN SECTION, WITH SUCCESSFUL TERMINATION.

Dr Andrew Inglis detailed the history of a case communicated by *Dr Izett Anderson* of Jamaica, which will appear in a future number of this Journal.

Dr Alexander R. Simpson remarked that the case was one of very great in-

terest, and thought that the long suppuration which took place must have been confined to the lower portion of the peritoneum, and not, as the writer seemed to believe, involving the whole extent. It was probably owing to some blood which had escaped into the cavity.

II. HEREDITARY TENDENCY TO POSTPARTUM HÆMORRHAGE.

Dr M'Cowan mentioned the case of a lady who had had severe flooding after three successive confinements. The labours had been easy, and no difficulty with the placenta. The patient's mother had also had severe hæmorrhage after each of her confinements. He (*Dr M'C.*) mentioned the case to ascertain whether the Society thought there was any prophylactic treatment which might be adopted in such cases. Before the lady's last confinement, he had prescribed iron and acids. During labour also, ergot had been freely used, and yet the flooding had come on more severe than before. It appeared that the amount increased with each pregnancy.

Dr Pattison had met with one case where hæmorrhage had occurred each time when the patient bore a boy, but never when it was a girl.

Dr Gordon thought the use of ergot during labour tended to prevent the occurrence of hæmorrhage afterwards.

Dr Moir had always found a single injection of cold water into the uterus sufficient to control such cases. He had only met with one case where it required to be repeated.

Dr Keiller said that, in his lectures, he always recommended this treatment, with the remark, that a medical man should always be provided with an injection syringe when attending a confinement. He (*Dr K.*) had noticed that patients who had previously suffered from menorrhagia were frequently liable to postpartum hæmorrhage.

Dr Stephenson had met with a similar case to *Dr M'Cowan's*, where flooding occurred after each delivery. He had been called to attend the patient in her fifth confinement, without any knowledge of her previous history. The labour was natural; but before the placenta came away, flooding set in. He at once removed the afterbirth, and employed external manipulation. The uterus contracted firmly, but while he had turned to wash his hands, the uterus again dilated, and hæmorrhage was taking place. He again completely emptied the uterus, compressed it externally, and employed the cold shock by means of a wet cloth thrown suddenly on the abdomen. The hæmorrhage ceased, but the patient had fainted. He accordingly compressed the abdominal aorta, when she revived in a few minutes. By keeping up the compression for a short time, these symptoms were prevented from recurring, and the patient made a quick recovery. She afterwards informed him (*Dr S.*) that she had had floodings after each of her previous confinements,—that she had been insensible each time after the birth of the child, the shortest time for four hours, and once as long as twelve hours. She had also never had any milk for several weeks after till this confinement, after which she had recovered sooner and felt stronger than at any of the previous occasions. *Dr Stephenson* thought the short duration of the faint, and the good recovery, were in a great measure due to the compression of the aorta keeping the blood in the upper part of the body, and preventing the recurrence of the hæmorrhage.

III. CASE OF DOUBLE VAGINA.

Dr Cappie said, "It is now a few years since the following case occurred in my practice; but as I believe it is quite unique, it may yet be worth while to put it on record.

"On 27th June 1859, I attended Mrs T. in her first confinement. She was under the average size, spare in her make, and with sharp, rather irregular features. The first stage of labour was lingering, and after the os uteri was dilated, and the membranes ruptured, the head still did not incline to enter the pelvis, although the pains were rapid, and rather strong.

"Having been away from the bed-side for a short time, I returned, and on

making an examination, I was surprised, and not a little embarrassed, to find that apparently the os uteri had again contracted, and it was all I could do to get the point of the finger sufficiently within the os to enable me to feel the child's head. Moreover, there appeared to be no cervix to the uterus. The os was felt at the upper part of what seemed a smooth, regular *cul de sac*. This appeared very mysterious, and I felt quite at a loss what to make of it, or what to do in the circumstances. Previously, although the os could still be felt with the finger, it was completely dilated, and as the patient was in great distress, I had been intending very shortly to apply the forceps; but now the very possibility of giving any assistance seemed to be taken away. I withdrew my hand, and with more feeling of perplexity than I cared to show, I pondered for a while on the extraordinary occurrence. I never had heard of a case of the os contracting after it had been fairly dilated, and no satisfactory explanation presented itself to my bewildered mind. The case, however, was becoming urgent, and something must be done. I again made an examination, when—*presto!* change!—as if by magic, the original state of matters was restored—the head resting at the brim of the pelvis, and the os uteri dilated. Though now relieved, so far as the possibility of giving assistance to the patient was concerned, the mystery was as great as ever, and I made a careful examination to discover its nature. I then found that the vagina was divided through its whole extent by a fleshy septum—that, indeed, there appeared to be two vaginæ, the one a very little larger than the other. At the lower part of the septum there appeared nearly as much room on the one side as on the other; but at the upper part, the neck of the uterus was on the left side. Close to the cervix, there was a communication between the two compartments, and it was through this I had been able to feel the head, when the finger had accidentally entered the compartment on the right side. A satisfactory solution of the mystery was thus afforded, and also a probable cause of the labour being tedious. I did not get much time to reflect on the interest of the case, as symptoms of exhaustion were presenting themselves in the patient. She commenced to vomit black, coffee-ground looking matter, and the appearance of prostration was so great, that I became alarmed for her safety. I immediately applied the Simpson's forceps, and on making traction, the septum gave way at the upper edge. I then tore it downwards with my finger as the head of the child made progress, and delivery was accomplished without any further unusual difficulty. On account of the apparent urgency of the case, I used force more strongly and with less interruption than I would have wished, and I believe it was owing to this circumstance that, though the child was lively the first day after its birth, it died on the third from convulsions. The patient herself recovered without a single unfavourable symptom, and I attended her in her second confinement almost exactly eleven months afterwards. Under strong, very forcing pains, she was then delivered without instrumental interference; but in her third confinement, which was in March last, I had to assist her with the long forceps. All trace of the ridge caused by the division of the septum, and which was perceptible at her second confinement, had disappeared at her third. I have only to add, that on questioning the patient, she said she had never been aware that there was anything peculiar in her conformation.

Dr Alexander R. Simpson had listened with much pleasure to *Dr Cappie's* graphic narration of his very interesting and curious case. It was an instance of one of the rarest of all the varieties of malformation to which the female organs of generation are subject. A large proportion of these malformations could be referred to the circumstance that the organs had not advanced beyond a stage of development through which they normally pass at an early period of embryonic life. The uterus and vagina, as the *Fellows* were aware, were formed from the coalescence of the lower segments of the two ducts of Müller; and when from any cause the septum between these two tubes remained persistent, in whole or in part, instead of disappearing, there resulted to a corresponding degree a duplicity of the genital organs; and when the many cases which had been recorded of uterine malformation came to be classified, they

presented a beautiful parallel to the various types of uterus characteristic of different classes of the lower animals, and of different stages of foetal growth. We were sometimes reminded of these primitive types on observing the form which the uterus assumed in those cases of spasmodic contractions where the circular fibres running round the orifices of the Fallopian tubes, had been called into separate action, and gave the organ the appearance as if it were horned. Another indication of the original duplicity of the organ, of frequent observation, was the bulging downwards of the fundus between the Fallopian orifices. A case of this kind, but where the division into two horns were already becoming even more distinct, had come under his (Dr A. R. S.'s) observation some time ago in a parturient woman who, during pregnancy, presented an appearance as if the child were lying to the right side of the abdomen, while a mass about the size of a child's head projected from the left side of the uterus, and in whom, after the child had been delivered, it was found necessary to remove the placenta. When the hand had been introduced in the interior, the right horn, which had been occupied by the foetus, contracted firmly round the thumb, while the four fingers passed into the left horn were engaged in detaching the adherent placenta. From this simple indication, as it were, of the original duplicity of the organ, all possible varieties might be met with of persistence of the septum on to the development of a distinct uterus and vagina on either side of it. But Dr Cappie's case presented this peculiarity, that while the septum between the two halves of the uterus had disappeared as usual, so as to form one single cavity capable of all the natural functions, the septum between the two halves of the vagina, which normally disappears before the intra-uterine one, had remained permanent, so as to form a double vagina. Such cases were extremely rare, and Kussmaul, in his exhaustive treatise on the malformations of the uterus, had contented himself with referring in a foot-note to a few recorded instances. In the atlas accompanying Förster's systematic work on the malformations of man, two cases of this kind were figured, one of which—a preparation in the Würzburg Museum—very exactly resembled that observed by Dr Cappie, even to having the septum imperfect at the upper part, so that the vagina had a single vault. The other figure showed a simple bridge consisting of a double layer of mucous membrane enclosing some muscular fibres, lying towards one side of the canal, and allowing of the passage of a thick quill between it and the vaginal wall. The only case in which he (Dr A. R. S.) had met with this variety of malformation, was one in which, as in that instance, there was a small bridge of about an inch in length lying half way up the left side of the vagina, underneath which he could pass the fore-finger; unless we might refer to the same category, a crescentic band of mucous membrane which he had felt in another case, to the right side of the cervix uteri, presenting none of the characters of cicatricial texture, but forming a small pouch or *cul de sac* towards the roof of the vagina that just fitted the tip of the finger. He (Dr A. R. S.) had, however, met with a case of double uterus and vagina, the history of which was somewhat incomplete, though it was, perhaps, sufficiently interesting to be worthy of being narrated before the Society now, and of being recorded in connexion with Dr Cappie's case in their published transactions. For some of the notes he was indebted to his friend Dr Thom of Crief, in whose service the patient now remains.

IV. CASE OF DOUBLE UTERUS.

H. B., æt. 22, began to menstruate first after she had reached the eighteenth year of her age, and catamenia continued irregularly for about twelve months after its first appearance. Having gone to town in the capacity of a domestic servant, the monthly periods had disappeared during an entire year, and during the succeeding year only appeared four times. She had now begun to suffer from leucorrhœa, headache, and some of the other indications of ill-health associated with amenorrhœa; and after having employed some of the ordinary remedial measures for a time in vain, he (Dr A. R. S.) had introduced an intra-uterine galvanic stem pessary. He had done so under the idea that the

amenorrhœa was connected with an imperfect development of the uterus, for on examining, per vaginam, he had felt the cervix small and flat, and on passing the sound, had found the cavity to measure only $2\frac{1}{4}$ inches in length. She had not worn the instrument many days when menstruation had set in, and lasted seven days. On introducing the finger afterwards to withdraw the instrument, he was amazed to find the vagina and os uteri empty, whilst the hard bulb of the pessary could be felt to the left side, as if it had been lying outside the vaginal wall. A little further examination, however, had solved the puzzle by showing that there was a septum running down the centre of the canal to within a short distance of the external orifice, and dividing the vagina into two, whilst the uterus was also double. The sound passed into the right uterine canal rather more than a quarter of an inch further than into the left, and when sounds were passed at the same time into each of the horns, the right one was found to turn toward and somewhat in front of the left. Five months had elapsed since that period, and the patient had thrice menstruated freely.

Dr Keiller remarked that there was a preparation in possession of Professor Struthers of Aberdeen, of a case of double uterus, met with in the dissecting-rooms of the Royal College of Surgeons, Edinburgh, where there was a double os with a double vagina, but with an opening in the septum. There was no known history of the case. He thought such cases were important in a medico-legal point of view.

Dr James Young had met with a case but the day before, where there was a septum in the upper part of the vagina, the cervix and os lay on one side, while the other ended in a *cul de sac*.

MEETING IV.

13th January 1864.—DR PATTISON, *Vice-President*, in the Chair.

I. CASES OF DOUBLE MONSTROSITY.

Dr Keiller exhibited a drawing of a case of double monstrosity. The children were two of a case of quadruplets, which occurred in the practice of Mr Harold Giles, surgeon, Coggeshall, Essex, and, as the drawing showed, were united side to side. They were still-born at the seventh and a-half month, and measured twelve inches in length. The other two children were separate, well-formed, alive at birth, but lived only for nearly an hour. The preparation is in the possession of Dr Braxton Hicks, who intends to publish an accurate description of the case. The following note received from Mr Giles, would explain the presentation of the children, and the duration of labour:—"The nature of the presentation of the double foetus was, in each case, that of the feet,—the whole of one foetus having been born before any of the other; the duration of the labour from its early commencement not more than six or seven hours; stage of pregnancy, about six to seven months; the placenta was in one mass; the labour very easy; the presentation of the third and fourth children, that of the head; these children lived each about half to three quarters of an hour; the recovery of the mother, as usual." Dr Keiller also showed a preparation of an abortion of a double monstrosity at the fourth month; in this case also the foetuses were united side to side.

II. FIBROUS POLYPUS OF THE UTERUS REMOVED BY THE ÉCRASEUR.

Dr Alexander R. Simpson showed a preparation of a fibrous polypus of the size of a small hen's egg, and stated that the patient, a young unmarried woman, about 25 years of age, had suffered for a length of time from pain in the back, and frequent attacks of menorrhagia. On examining her immediately after the cessation of a menstrual period, which had been attended with considerable suffering, he had felt the polyp protruding through the os; introduced a sponge-tent so as to dilate the cervix, and then removed the mass by means of the écraseur. The patient had lost no blood during the operation, or after-

wards, and had improved in health, although the uterus was still large, and probably had some other tumours embedded in its walls.

III. CAULIFLOWER EXCRESCENCE OF THE CERVIX UTERI REMOVED BY THE ÉCRASEUR.

In the absence of *Professor Simpson*, the Secretary showed a preparation of a cervix uteri affected with malignant disease, of which the following history is extracted from the Journal of Ward No. XII. in the Royal Infirmary:—

Mrs Adamson, æt. 40, was admitted 6th January 1864. She is the mother of several children, and states that till eight months ago she always enjoyed good health. Seven months before admission, at her menstrual period, she had a severe flooding, which very much reduced her strength. Since this period, the menses has been very much increased, and she has had other two very severe floodings, one three months after the first, and the other three weeks before admission. On admission, she was found weak and anæmic to a degree. She was at once ordered iron drops, brandy, and beef-tea. When an examination was made per vaginam, there was found growing from the cervix a large cauliflower mass about the size of a man's fist. On the 7th January, Professor Simpson applied the écraseur beyond the diseased portion, and removed entirely the cancerous mass. There was literally no bleeding. Patient had no bad symptom till the evening of the second day, when she became somewhat feverish. She rapidly, however, recovered, and on the fourth day was sitting up in bed. To-day, Jan. 12, patient feels quite well, looks ever so much stronger than when admitted, and takes her food with a relish.

Dr Keiller remarked, that he had previously communicated the history of a similar case in which he had operated. The operation afforded very great relief to the patient, and for a time she enjoyed very good health. The disease, however, returned, and finally proved fatal. In such cases, you can never reckon on a permanent removal of the disease. Our experience showed that the opposite was the case; but, nevertheless, the great relief afforded to the patient, and the no doubt prolongation of life, fully warranted the operation where the case was seen in time.

IV. DISCUSSION ON THE VACCINATION ACT.

Dr Pattison remarked with reference to the duplicate certificate which medical men had been asked to fill up, that it was throwing additional work on practitioners, merely to save trouble to parents. The act did not render it compulsory, and he would never fill one up.

Dr Ritchie said, it was merely asking medical men to do for nothing what the registrars would receive 1s. 6d. for doing. It was, therefore, a hardship upon the registrars.

Dr Husband considered the difficulty connected with this new Vaccination Act was, that it tended directly to check "public vaccination," understanding by that expression the "vaccination of the poorer classes," whose infants to a large extent all over the country, and especially in large towns, have hitherto been vaccinated gratuitously. He believed there will continue to be in future, as there has always been heretofore, a portion of the community (and not a small one) above the class of paupers, who must either be vaccinated gratuitously or not at all. Now, it is one thing to vaccinate this class from motives of benevolence and of free choice, and quite another thing to have to vaccinate them under compulsion. For it is easy to see that, whoever devotes himself in any degree now to the work of gratuitous vaccination of the children of the poorer or neglected classes, will have to work in harness as it were, and virtually under compulsion. Formerly he was his own master, as it were; but now, if he meddled with this class of practice at all, he is responsible to the Government in this sense, that for every infant whom he undertakes to vaccinate, he must furnish to the Registrar a certificate of successful vaccination, or insusceptibility, or of postponement. This, of course, is all very well, and may add comparatively little to our labour, so long as each man keeps within

his own sphere of practice, and vaccinates only the infants of his own patients. But he (Dr H.) had no doubt whatever, that many medical men who hitherto have been doing a good deal of benevolent work in vaccinating the children of the poor, will feel themselves so fettered by the requirements of the new Act, that they will do a great deal less work of this kind in future, and that many will give up the practice altogether. It is plain, also, that this inducement which the Act holds out to every member of the medical profession, without exception, not to vaccinate for nothing if he can help it, it especially holds out to those gentlemen who have been, in terms of the Act, appointed vaccinators, and who, as such, are paid, not according to the number of poor children they vaccinate, but according to the number of defaulters who fail to get vaccinated within the legal period of six months.

Dr Alexander Wood had come to the meeting for the express purpose of hearing the opinions of the members upon the Act. He considered it a very imperfect piece of legislation; and it was of great importance that a body such as this Society should express its opinions upon it. The bill was deficient, not as *Dr Husband* considered in making no provision for the vaccination of the poor above the class of paupers, who, failing to get vaccinated before the expiry of the six months, came under the head of recusants, for which the bill provided, although there might be some difficulty in overtaking them as such. One defect of the bill lay in making no provision to overtake the migratory portion of the population, such as the families of labourers or the like. In a former proposal to the Lord Advocate, he had suggested a check to be placed upon children upon admission into schools and factories, but that learned gentleman distinctly stated that he could not face Parliament with such a clause in the bill. Many complaints had appeared in letters to the newspapers, but they had arisen in a great measure from a false expectation on the part of some parochial medical men, who had expected that they would have been entitled to vaccinate every child in their parish; but this not being the case, they had discovered that their emoluments would not be so great as expected. He might state that, in conjunction with *Dr Burt*, he had waited upon the Board of Supervision, and had put to them this question: "In the event of a Parochial Board saying to a medical man, we will give you so much a-year, and you will do all the vaccination we may ask you to perform, would they consider such an arrangement legal; and would they upon the report of such a case interfere?" The Board of Supervision in reply, had distinctly stated that they would stop any such arrangement, and that each parochial medical officer must receive, at least, 1s. 6d. or 2s. 6d. for every vaccination he performed.

The following motions having been moved by *Dr Wood*, and seconded by *Dr Keller*, were unanimously agreed to:—

1st, That this Society is of opinion that the duty of furnishing one certificate of vaccination without payment, imposed by the Vaccination Act upon medical men, is sufficiently irksome; and that where duplicate certificates are required, they should be furnished by the Registrars of the respective districts.

2d, That this Society, having considered the Vaccination Act, is of opinion, that provision having now been made for the payment of the vaccination of paupers and others requiring such aid at the public expense, it is no longer necessary or expedient for medical men to perform the operation gratuitously.

PROFESSIONAL REMUNERATION IN THE COUNTRY DISTRICTS OF SCOTLAND.

A CASE of much importance to the medical profession has been recently decided in the south of Scotland. A country surgeon having sent in his account for medical attendance, payment was refused on the ground that the charges were exorbitant, and about half the amount claimed was offered. *Dr Skene*, the surgeon in question, applied to the Steward's Court at Kirkcudbright, and the case was referred to *Dr McCulloch* of Dumfries, who gave

in a very able report; in accordance with which decree was pronounced in the pursuer's favour for the balance of his account, interest, and expenses of process. As we have been favoured with a complete copy of the documents, we lay them in detail before our readers.

STATEMENT BY DR M'CULLOCH.

As this case involved me in such a delicate responsibility professionally, I deemed it prudent to ascertain the opinions of several of my professional brethren, whose long experience, extensive practice amongst all ranks, and high respectability of character would render their opinions very important, and add due weight to mine, if in accordance with theirs. I therefore sent the two following circulars to William M'Cormack, Esq., surgeon, Glenluce; Dr Richardson, Gatehouse of Fleet; Dr Millman, New Galloway; James T. Wilson, Esq., surgeon, Lockerbie; and Dr A. B. Bogie, Annan. In addition, I laid the whole process, as it came to me, before Archibald Blacklock, Esq., surgeon, Dumfries. Mr Blacklock, of course, saw the names of the parties in the process, but none of the others knew who the parties were, excepting Dr Millman of New Galloway, who, it seems, had some time ago been informed of, and talked over the whole case with one of the two medical practitioners named by the defender as umpires, and objected to by the pursuer. I number and send the answers of each of these gentlemen in the order I received them.

Dumfries, 7th November 1863.

My dear Sir,—I have been intrusted with the solution of a very unpleasant piece of business. A country surgeon, about twenty miles from Dumfries, has attended for about six months the family of a country *gentleman*, residing about a mile from the surgeon's house, and, previous to the occurrence I am about to relate, he had, I believe, attended the same family for some time. It seems, after the surgeon had tendered his account, which particularizes each visit and each medicine supplied from the surgeon's own laboratory, that payment was refused on the grounds that the "account is exorbitant," and that "the medicine as charged" is "a most ridiculous amount." The attendance began on the 19th of December 1862, and ended on the 22d day of June 1863, both inclusive. During that time, it appears from the account, that the surgeon made ninety-three visits to members of the family who were ill. For seventeen days during that time the surgeon made one visit per day. During twenty-six days he made two visits per day, and during eight days he made three visits per day. Seven of these visits were in consultation with a senior practitioner. During one of these visits he vaccinated several members of the family; during another he was detained all night, and six of the remaining visits were made after 10 P.M. and before 6 A.M. *Every* visit is charged five shillings, with the single exception of the visit during which he was retained all night,—that one is charged seven shillings and sixpence; that is to say, the visit when the family was vaccinated, and those betwixt 10 P.M. and 6 A.M. are charged neither more nor less than those during the day, viz. five shillings for each visit. During the said attendance the surgeon dispensed to the gentleman's family forty-six powders, for which he charges twopence each; twelve pills, for which he charges fourpence; three plasters, for which he charges sixpence each; and five bottles, called mixtures, for which he charges respectively fourpence-halfpenny, fivepence, and eightpence per ounce. One of these bottles is put down as a four ounce mixture, three of them two ounces, and one of them one ounce mixture. The four ounce one is charged fourpence-halfpenny per ounce, the two ounce ones fivepence per ounce, and the one ounce one eightpence per ounce. The particular drugs contained in the powders, pills, and mixtures are not specified.

The whole account amounts to £25, 1s. 6d., of which £5 appears to have been paid during attendance. After the receipt of the account, the gentleman wrote a letter to the surgeon, of which the following is a verbatim copy:—

"30th June 1863.

"Sir,—Since receiving your extended account, I have made inquiries as to the charges you make. I find that my own impression is correct, and that

your account is most exorbitant. I am advised to make you an offer of 2s. 6d. each visit, allowing a double fee for all calls made after 10 P.M. and before 6 A.M. Upon these terms I will settle your account at once, and also pay the medicine as charged, though I consider it a most ridiculous amount. I may remark, that I can prove that you have charged a day's visit that you did not make. This being the case, it is quite likely that you may have made other similar charges. I may also remark, that I do not think there is another medical man in Scotland would make seven visits in two days, and charge for them all. In conclusion, should you not accept of my offer, I leave you to take what steps you think best to get your bill.—I am, Sir, yours most obediently,

I may remark, that the surgeon's account does not contain seven visits made and charged for in two days.

After this letter the surgeon summoned the gentleman before the Sheriff's Court, and after a statement and reply by the legal agents of the pursuer and defender, in which the pursuer states that he made all the visits and furnished all the medicines stated in the account, that the greater number of these visits were made to a son of the defender, who was dangerously ill, and whose case caused great anxiety to the pursuer, and that all the visits specified in said account, and the medicine supplied by the pursuer, were made under the instructions and on the employment of the defender, and for his behoof. The defender admits the employment, attendance, and medicine supplied, and that his son was dangerously ill, repeats the offer of 2s. 6d. per visit for day visits, and 5s. per visit betwixt 10 P.M. and 6 A.M.; he also produces a receipted account of the pursuer's of date 27th November 1861, charged thus,—“To visit, etc., £4;” and the defender alleges that the “etc.” means medicine; and the defender proposes that the account be referred to one or other of two medical practitioners whom he names. The Sheriff, in his interlocutor, advises this to be done. The pursuer agrees to so refer the account, but objects to the practitioners named, alleging that they are intimate friends of the defender. The legal agents for the pursuer and defender agree to refer it to me, and the Sheriff has remitted it to me in the following terms:—“Remits, of consent, in terms of said minute, to Dr J. M. McCulloch of Dumfries, to examine the account libelled, and to report, *quam primum*, whether, in his opinion, the charges for medicine and attendance in said account are fair and reasonable; and if not so, to report what he considers fair and reasonable charges in the circumstances; and decerns.”

Now, my dear Sir, you will easily conceive that I feel a delicacy in attempting to decide this professional matter; I am therefore very anxious to be fortified and guided by the opinions of several of my professional brethren, whose character, long experience, and extensive practice, especially in rural districts, give them a right to speak authoritatively on such a subject. I do not think you know either of the parties,—at any rate, I have purposely withheld their names, so that in every respect you may be as free to state your opinion as if it were a suppositive case. For the same reason I withhold my own opinion.

I have stated the case, I think, fully and fairly; and you will do me a very great favour if you will, as soon as possible, give me your opinion in writing, and in the form prescribed by the Sheriff. It is necessary to mention that, should you grant this favour, your letter will go along with my own opinion, and that, if you mention any extraneous matters, it will be as well to do so on a separate sheet.—I remain, my dear Sir, yours very truly,

JAMES M. McCULLOCH.

Dumfries, 9th November 1863.

My dear Sir,—I see that I have made a mistake in the circular I sent you on the 7th current. There are seven visits charged in two days. My mistake arose from the two morning visits, 2 A.M. and 10 A.M., being charged on a separate line from the two evening visits, 2 P.M. and 9 P.M.—I remain, yours truly,

JAMES M. McCULLOCH.

ANSWERS.

Dumfries, 9th November 1863.

Having carefully examined Mr Grigor Skene's account against Mr James Stewart for medical attendance, etc., at Collin House, between the 19th of December 1862 and the 22d June 1863, I have no hesitation in saying that I consider the whole amount charged is fair and moderate (if Mr Stewart be a person in what is usually called easy circumstances).

ARCHIBALD BLACKLOCK, Surgeon.

Guthrie House of Fleet, 9th November 1863.

My dear Sir,—I am in receipt of your communication of the 7th instant, in which you have stated to me the particulars of a disputed account submitted for your decision. I have carefully perused the clear and distinct statements in your letter, and deliberately thought over all the circumstances of the case; and, taking into consideration the extra attendance at unusual hours, the consultations, the dangerous nature of the illness, and consequent responsibility and anxiety to the medical attendant, it is my opinion, that the charges for medicine and attendance, in the account referred to, are fair and reasonable.

—I am, my dear Sir, yours truly,

WM. RICHARDSON.

To J. M. McCulloch, M.D., etc.

Glenluce, 11th November 1863.

My dear Sir,—I duly received your lengthened communication in reference to the ninety-three visits of the country surgeon to the country gentleman and family, amounting, with medicine, to £25, 1s. 6d. With regard to the charges for medicine being ridiculous, I deny that most emphatically. I have been in the habit of making up medicines for my patients for upwards of twenty years; and let any man take time and make up medicines for less if he can, and do it well. With regard to the charges, they may be very easily less than enough, so far as I can judge from *experience*. For example, I have met with a *very exacting, near calculating* country gentleman more than once, who said peremptorily—"Attend my son, or my daughter," as the case may be. Often, when busy, it is very difficult to pay one visit daily to your next door neighbour, more so to pay two, and clearly more so still to be called up at any hour in the night in the midst of all this. Our patients never calculate how much this damages us in our ordinary daily avocations. I have again and again found myself but poorly paid by a pretty large bill in cases exactly such as you describe, missing this case and that case by a time, this day worn out and unable to work, that day fatigued out of measure—all to attend "my son or my daughter." There is generally truth in arithmetic, if we arrive at the same point by two different methods. If a mile distant, I usually charge a farmer 2s. 6d., and charge a country gentleman at least 3s. 6d. It is not always of so little consequence and so little damaging to wait for consultation with a senior practitioner as the country people imagine. Time is money in the same sense as knowledge is power. Calculate, then, the seven visits in consultation for opportunities let slip, at £3, 4s. 2d.; one visit all night, £1; six visits at night, £3; seventy-nine visits, 3s. 6d. each, £18, 16s. 6d.; forty-six powders, 2d. each, 7s. 8d.; twelve pills, 4d.; three plasters, 1s. 6d.; four ounce mixtures, at 4½d. per ounce, 1s. 6d.; three bottles two ounce mixture, at 5d. per ounce, 2s. 6d.; one bottle one ounce mixture, 8d. In all, £26, 14s. 10d.

If the surgeon is a man of known probity, and would scorn to make visits unnecessarily, and especially if all the above visits have been exacted in the way and times mentioned, he ought, in my opinion, to have his charge in full. There never was a greater mistake, in *practice*, however well it may look in theory, than to think that the second daily visit, exacted day after day, ought to be less than the first. You come home late and must attend, or you attend and must go out late, and yet for all this extra toil and trouble, you are expected to charge less. A hundred times in my lifetime I have been driven, by extra attendance on one case, to travel tens of miles at night; and is this nothing? It is but too often considered so; and it is far from just. In conclusion, I know nothing of the surgeon and nothing of the gentleman. I view

them both as honest men; the one one making an average charge to remunerate him for his loss of time, toil and trouble, etc., the other mistaken, or misled; therefore I again repeat, that the surgeon on these grounds should have his charge in full.—Yours truly,

WM. M'CORMICK, Surgeon.

New Galloway, 10th November 1863.

My dear Sir,—After an attentive consideration of the subject in dispute, mentioned in your circular, I have arrived at the following conclusion:—If the gentleman who disputes the surgeon's account is a person in *affluent* circumstances, I do not consider the charges for professional attendance and medicines unreasonable; but if, on the contrary, his means are moderate, I believe the charges, for *visits*, are above those usually made by general practitioners; in the latter case, and considering the distance of the patient's residence being only one mile from that of the medical attendant's, I think a fee of 2s. 6d. per visit by day, and 5s. per visit by night, as tendered by the gentleman, is quite a reasonable offer! I would, however, allow one guinea for the detention all night, and 2s. 6d. for each vaccination! With regard to consultation visits, I am not aware that it is customary to charge a higher fee than the ordinary one, unless the consultation is prolonged; in which case I think it would not be unreasonable to increase the fee! I consider the charges made for the powders, pills, and plasters, moderate and fair; but I find it more difficult to give a decisive opinion as to the reasonableness of the charge for the mixtures, no specification of the drugs contained in them being given (which, indeed, is not usual), as they might have been compounded of expensive medicines, which demand a charge of even 8d. per ounce in order to prove remunerative! But, judging from the charges made for the other medicines, I am inclined to believe the mixtures are not overcharged. I am, my dear Sir, yours very faithfully,

ALFRED M'KINLAY MILLMAN, M.D., etc.

To J. M. M'Culloch, M.D., etc., Dumfries.

Lockerbie, 10th Nov. 1863.

My dear Sir,—I received your circular of the 7th instant, with detailed statement of a very disagreeable matter. To give an opinion in such a matter is not very pleasant; and I am glad the profession is not often called upon to do so.

In thinking over it, and considering the condition of "a country gentleman," I certainly would not, under similar circumstances, consider I made an over-charge at 5s. per visit; but in a case requiring two or three visits per day, I should not charge the second and third visits at the same rate. In all visits between 10 o'clock P.M. and 6 o'clock A.M., I should charge double the first visit of the day. If, during any visit necessary for my patient, I was requested to vaccinate members of the household, I should consider myself entitled to charge for so doing. In the event of my being detained all night, I should consider myself justified in charging for such detention, according to the demands upon my professional time. I should also, if called to consultation, at other than the usual time of visit, deem myself warranted to charge for such consultation.—I am, my dear Sir, yours very truly,

JAMES T. WILSON.

To Dr M'Culloch.

Annan, 12th November 1863.

My dear Sir,—After having carefully considered your statement of the case referred to in your note of the 9th November, about medical fees and charges for medicines, I am of opinion that the charges made by "a country surgeon," for "medicine and attendance," are fair and reasonable. I may mention that I do not know the names of either the pursuer or defender.—Believe me, yours very truly,

A. B. BOGIE.

To Dr M'Culloch.

DR J. M. M'CULLOCH'S REMARKS AND OPINION.

In compliance with, and according to, the remit of his lordship the Steward-substitute of the stewartry of Kirkcudbright, I beg leave most respectfully to

submit the following. Having given this case my best consideration, I deem it advisable, before stating my opinion, to give my reasons for the conclusion at which I have arrived. It is well known that medical men, especially in rural districts, must of necessity attend upon all classes of the people, high and low, rich and poor. It must be obvious, therefore, that they must adapt their charges for professional services to the status and means of their patients, and often to the different means of persons of the same status. This necessarily implies a maximum and minimum charge for the *same* service, according to the means and status of the employer, providing such charges are, in the words of the learned Steward, "fair and reasonable." That there are fixed fees in several branches of the law I do not consider decisive of the point. As life and health are infinitely more important than property, as disease is much more rife than legal disputes, and as these fixed scales of legal fees, *de facto*, prevent persons of small means going to law, even in many cases of great hardship, the analogy does not hold good. No doubt, if a man is a *pauper* he can prosecute a plea, in a Peter Peebles *v.* Plainstones way, but, if he cannot constitute himself a *pauper*, the man of small means cannot go to law. Not so in medicine; the doctor is morally and socially constrained to give his services to all, and in far more cases than the public conceive, gets no fee at all. What then? The doctor must live, must keep up a certain status, and, like other men, endeavour to save a competency for old age and for his wife and family, and for this the rich and upper classes *must* pay; otherwise, they would soon have either no medical advisers, or those who would be worse than none.

The pursuer asserts that he made all the visits, and supplied all the medicines stated in the account, and that all these visits and medicines "were made under the instructions and on the employment of the defender, and for his behoof." The defender admits the employment, attendance, and medicine supplied, with the exception contained in his resentful letter to the pursuer, of 30th June 1863, where he says he can prove that the pursuer has charged a day's visit which he did not make, and further insinuates that he had made other similar charges. The defender further finds fault with the pursuer for charging for seven visits in two days, and states, that "he does not think there is another medical man in Scotland who would make seven visits in two days, and charge for them all." From these statements, *pro* and *con*, I infer that *each* visit was made "under the instructions and employment of the defender," such instructions being either overtly given, or implied. I infer this, 1st, Because the defender, in his defences, makes no charge against the pursuer of having, of his (the pursuer's) own accord, made any unsolicited or unnecessary visits. 2d, Because it is admitted by the defender that his son was "dangerously ill." 3d, And, *à fortiori*, because, had the pursuer made visits which were unnecessary or uncalled for, there is every reason to believe that the defender would have reproached him therewith in his irate letter to the pursuer of the 30th of June 1863. And, 4th, Because, had the pursuer made more visits than were, in the defender's opinion, necessary, or expected, the defender should have objected to them at the time.

As to the defender's objection and reproach in regard to seven visits being charged in two days, it could only have been relevant if one or more of these visits were unnecessary or unexpected, which, for the above reasons, is improbable. Medical visits, *quâ* employment and remuneration, are a mere matter of business, and have no claim to be considered as matters of feeling or generosity, except in regard to the actual or comparative poverty of the employer, when such is the case. So far from numerous visits in one day being charged less, or not at all, they ought, in justice, to be charged more and more, after the first and second, *i.e.*, assuming that they are either absolutely necessary in a dangerous case, or that they are made under the instructions, direct or implied, of the employers; because, such frequent calls upon his time, in any one case, are not only irksome, but interfere with and disarrange the practitioner's duties to his other patients, often deprive him of other cases and families, and but too often cause him to travel and visit at untimely hours. The same, also, with regard to consultations; medical men

are constantly liable to sudden calls to cases of emergency; the time for consultation must be fixed beforehand, and it often, therefore, becomes either a loss or a great inconvenience. Consultations, also, in general, consume more time than an ordinary visit.

The defender produces a receipted account charged by the pursuer against the defender, thus—"To visits, etc., £4." As there is no evidence on the record as to the conditions and circumstances under which this charge was made, and as it might have been a mere "*en passant*" visit, or some trifling matter, etc., I consider myself justified in dismissing it as irrelevant.

I am justified in assuming that the defender believed and looked upon the pursuer as a respectable, qualified, and competent professional attendant and adviser. 1st, Because he employed him so long to attend his own son when *dangerously* ill, and, with the exception of seven consultations with Mr Anderson, appears to have intrusted that son's dangerous case *entirely* to the pursuer's skill and care. 2d, Because, in his angry letter of the 30th of June ult., he, whilst saying bitter things, does not impugn the pursuer's status, qualifications, and competency as a surgeon.

I also assume that the defender is a country *gentleman*, living as such, and possessing sufficient means for so doing, because I see or know of nothing on the record, or otherwise, to induce me to believe that he could ill afford to pay the usual fees charged to persons of his condition.

The defender, a *gentleman*, offers 2s. 6d. to a professional gentleman (whom, as I have shown, he considered of competent status, qualification, and skill, to be intrusted with the care of his own son when *dangerously* ill), for each visit by day, at the distance of a mile. Query; what, at such a rate of remuneration, would the farmer pay? What the blacksmith? What the labourer? Upon such a scale of fees, the latter must be set down at sixpence for each visit at the distance of a mile,—pay which would be considered small for an errand boy!

The defender states that he has made inquiries, and that his advisers agree with him in thinking the account "most exorbitant." As the names of these parties are not given, it is impossible to know whether or not they were competent judges. I, therefore, dismiss such anonymous opinions as irrelevant.

The defender states "that he can prove that the pursuer has charged a day's visit that he did not make," and insinuates that there are other charges of a similar kind. From the strong language used both before and after this statement, and from the tone and animus displayed throughout the whole of the defender's letter of the 30th of June ult., this statement conveys to my mind an unmistakable insinuation of fraud and falsehood against the pursuer. Supposing, for the nonce, that the defender can prove that the pursuer has charged a visit which he did not make, charity and reason would both attribute such an error to mistake, perhaps of date,—a mistake the more probable, as the pursuer's account is written out in a very slovenly and unbusinesslike manner. Be these, however, as they may, I am clearly of opinion, that, if the defender can prove to his lordship the Steward-substitute, or to any person whom his lordship may appoint, that any visit or visits have been charged without having been made, they ought to be deducted from the account.

Be the defender's allegation of a visit being charged which was never made correct or not, I am clearly of opinion that the pursuer has "ridiculously" undercharged two visits,—viz., that made on the 12th of January 1863, and charged thus,—"*Visit, and vaccinating Lucien and other members of the family, 5s.*;" and that made on the 11th of April 1863, and charged thus,—"*Visit, 8 P.M., and remaining all night, 7s. 6d.*" The New Vaccination Act fixes the *parish* fee for *each pauper* vaccinated at 1s. 6d., if within a mile of the surgeon's residence. Query; What should a *gentleman* in easy circumstances pay for vaccinating each member of his family a mile from the surgeon's residence? The proportion could not be less than 7s. 6d. each, and, indeed, that is a common fee in such a case. I am, also, clearly of opinion, that the charge for the visit on the 11th of April 1863, would have been moderate at £1, 1s.

As to the charges for medicines. A druggist either receives ready money over the counter, or trusts only those whom he can safely credit for the medicines he dispenses. The medical practitioner, however, who dispenses medicines to his patients (and those in rural districts are almost necessitated so to do), must give these medicines to a great many of those patients who he knows do not, or cannot pay him for either medicine or attendance. The druggist can, therefore, afford to dispose of his drugs at a cheaper rate than the dispensing medical practitioner, who, were he not to charge higher than the druggist, must, of necessity, lose money by dispensing drugs. The prices charged by the pursuer, therefore, for drugs, are, in my opinion, fair and reasonable. And how the defender can declare that about 14s. is "a ridiculous amount" for the drugs prescribed and supplied during an attendance of about six months on a family, one of whom is admitted to have been long "dangerously ill," is to me incomprehensible, except upon the supposition that the defender has some secret grounds for refusing payment, etc., other than those expressed with such animus and acerbity in his letter of the 30th June ult.

I have assumed that the defender is a country *gentleman*, living as such, and possessing sufficient means for so doing; and yet, although I am not informed by the record, or otherwise, it is possible that he may be in straitened circumstances. If so, had he said or hinted so to the pursuer, and that the sum total was more than he could afford to pay, as a matter of professional honour and custom it would have been morally incumbent upon the pursuer to have modified his account accordingly.

In consequence of the foregoing considerations, and, also, because I am generally, and with one exception, entirely corroborated by those competent judges, the highly respected, experienced, and honourable medical practitioners to whom I appealed for advice, I have no hesitation in declaring, that I am of opinion that the charges, both for medicine and attendance, in the account libelled, are fair and reasonable.

JAMES M. McCULLOCH, M.D., etc.

Dumfries, 14th November 1863.

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Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Epidemic Pneumonia in Iceland, in the Year 1863.*

By JOHN HJALTELIN, M.D., Inspecting Medical Officer of Iceland.

IN the annals of Iceland we find many records of epidemic pneumonias which are said to have been very dangerous and to have caused a great mortality amongst the inhabitants of this country. The Icelandic expression for such epidemics is "Taksótt," which signifies an epidemic accompanied by fever and fixed pain in the chest; for "Tak" means "fixed pain," especially in the chest, and "Sótt" always signifies "fever." So far as we can trace the meaning of the annals, these epidemic pneumonias have generally happened during the cold seasons, and have usually raged during severe winters and cold springs, always occasioning a great mortality.

Having practised in Iceland during ten years, I have, up to this year, only met with sporadic pneumonias, and these have seldom been much malignant, except when complicated with influenza or originated from hydatids in the lungs.

When I, last winter, through the reports from the physicians in the north part of our country, got an information of a dangerous pneumonia which had shown an epidemic character, I felt quite sure that this epidemic disease was one of the renowned epidemics of that kind which formerly, according to our annals, so often have raged in our country. The last winter was an extremely stormy and rough one in this island. People were still in many places, and especially in the north, newly recovered from the epidemic dominion of the influenza, and it seemed to me quite natural that their respiratory organs were still in a state of great sensibility, which might give occasion to acute pulmonary affections during that extremely rough and stormy winter season. This my supposition was strengthened by many cases of serious bronchial affections, which, during the first winter months, were of no rare occurrence.

It was, indeed, out of this morbid disposition, in combination with our severe and stormy winter season, that the epidemic pneumonia seemed to arise. In the months of January and February

this year (1863) sporadic cases of genuine pneumonia began to appear and grow more frequent. These cases were already in the beginning extremely severe, and the disease set in, in the first four cases, as a bilateral pneumonia, complicated with bronchitis, and followed by sthenic fever, hurried respiration, great anxiety, strong headache, insomnia, delirium, abrupt painful cough, great prostration, and the very characteristic "sputa pneumonica." Happily enough, all the first severe cases terminated in resolution, and the patients recovered in a time of sixteen to twenty-four days. This encouraged me in my usual treatment of this disease, by the use of which I, in my twenty years' practice of the sporadic pneumonias, never remember to have lost a patient, and this occasioned in me that resolution never to abandon this treatment until I should see it fail in one or more cases. But before describing this my treatment I will try to give a true description not only of all the special circumstances which seemed to influence the epidemical constitution, but also a view of the registered cases, as far as these are mentioned in my medical journal; but in so doing I do not think it necessary to give a complete description of every case from its beginning to its end, for this would give a tedious length, and would probably be of less interest, while a tabular view of every case as it appeared at the first visit may seem necessary to give an outline of its pathological nature.

It must certainly be accepted as a well-known fact, that a cold climate, with a stormy and rigorous winter season, will generally in more or less degree give rise to severe and acute pulmonary affections, and it is equally clear that such causes may, in our "ultima Thule," work with greater energy than in the more temperate climates, and that even to such extent which medical men practising in the more southern latitudes scarcely may imagine. I am very well aware of the contrary view by some modern pathologists, who are inclined to look upon all diseases as well-defined things, which always, in all ages, and by all circumstances, will be the same; but such a view, by which diseases are made up to a sort of individuals, like well-defined minerals, plants, or lower organisms, may do well in renowned medical books, but they will never be found borne out by facts; and looking more closely into the matter we shall surely find out that the history of epidemics speaks strongly against such an acception. The proposition of old Celsus, "*Differunt quoque pro natura locorum genera medicinæ, et aliud opus est Romæ, aliud in Aegypto, aliud in Gallia,*" still holds good, and is verified by the medical history since his time. Diseases are certainly no stable things, no individuals, but very variable pathological phenomena, modified in an indefinite manner, according to various causes which produce them.

The combination of many effective causes seemed in our epidemic to influence the malignity of the disease; the heavy storms, the dry and cold air strongly impregnated with ozone, all combining their

irritant effect on the mucous membrane of the lungs and the air-cells, must necessarily make all inflammations of the chest-organs more dangerous in the high latitudes than they are in Great Britain, or in countries of the same parallel. Dr Hubener has, many years ago, mentioned the frequent pneumonias amongst the Eskimoes ("Lehre von der Ansteckung, Leipzig, 1842"); and it is generally known that it causes a great mortality in all northern regions. It has of late been asserted that the ozone has a very marked irritant effect on the respiratory organs. Pulmonary affections are most common when the electrical state of the atmosphere is strongly positive; and, according to well-known fact, ozone is produced by high electric state of the atmosphere. For about twelve years since I made in some Danish newspapers remarks on this subject, being at the same time engaged in some electrical experiments with an extremely strong apparatus. I then convinced myself of the irritant effect of ozonised air, which, I think, may be shown by direct experiments; and I have since that time often assured myself of the enormous effect which the atmosphere strongly impregnated with this gas exerts on dead and living bodies. Thus I have many times observed the destroying effect ozonised air has on cesspool and watercloset emanations; and here it seems to work in a like manner as chlorine gas. I have, moreover, observed that putrefaction is retarded by such air, or at least putrid smell is by its presence made less obvious. In short, its effects are in many respects analogous to those of chlorine gas; but all chemists know how dangerous this gas is for the respiratory organs if inhaled in any great quantity. During our epidemic all the aforesaid effects of the ozonised air were clear enough, and the uncommonly weak odours our cesspools at this time evolved were even remarked by people who had no idea of ozone or its chemical nature. This is also, I think, in full accordance with the best writers in natural philosophy of modern time; and thus we find, in the *Elements of Natural Philosophy*, by Golding Bird and Charles Brooke, (fifth Edition, page 402), ozone frequently exists in the atmosphere, especially in the air blowing from the sea, and in all probability plays a most important part in the laboratory of nature. These authors call it also "the most energetic oxidising agent."

Many other natural philosophers have of late remarked the effect, ozonised air shows on several epidemics,¹ and I think it would be

¹ In this respect I will point out an article found in Mr Louis Figuiers "*L'Année Scientifique et Industrielle*," Paris, 1857, page 213. "D'après Schönbein, on aurait observé en 1855 une quantité considerable d'ozone dans l'atmosphère de Berlin pendant une epidemie de grippe et sous une constitution medecale predisposant aux affections de poitrine. L'inverse aurait eu lieu sous le règne d'une constitution gastrique, et notamment pendant le cholera. Dans cette dernière circonstance, on aurait constaté une absence totale d'ozone. Il faut s'en rapporter au Docteur Boeckel. La malaria se montre toujours avec le zero de l'ozonoscope et lorsque les fièvres paludines regnent fortement pareille chose a lieu. D'après le même observateur à

of a high interest for the epidemiology if those effects were better studied than they hitherto have been. But it seems to be one of the weak points of our modern medical studies that they are more directed towards the morphology of pathological products and their microscopic nature than toward the real and effective causes of these products. Of course, I do not in any way mean that pathological anatomy and microscopical pathology ought to be neglected or estimated less than they deserve; and I willingly pay my great esteem to those excellent medical men who of late have promulgated and promoted those studies; but I think it highly desirable that the etiology of pathological products were equally well known as the products themselves. This would, I think, be of the greatest interest for the practical medicine, for that expression of Celsus, where he says, "*Nec credibile est eum scire curare morbos, qui unde sint nesciat*," is really remarkable. The great benefit we of late have gained by the theoretical studies of the "hygiene," and the practical applications of her principles, ought to animate us to the most scrupulous researches in the etiology of endemic and epidemic diseases. Much remains still to be done in this respect; but by comparing the endemics and epidemics of several countries, and all the circumstances in the "*circumfusa et ingesta*" during such epidemics, we may certainly, in time to come, gain a deeper insight into the nature of some of these endemics and epidemics.

Before describing my treatment of the disease itself, and its pathological nature shown by some autopsies, I shall give an outline of about eighty of the best-observed cases, along with some meteorological observations of the atmospheric pressure, the temperature, and the ozonometric state of the air during this epidemic, and it will be seen that the highest degree on the ozonometer coincided with the acme of the epidemic.

1. December 10, 1862. Barometer, 28·5; thermometer, 28°; ozonometer, 6; wind, north-east; dry.

Helga, woman, married; age, 53. Ill, 18 days. Bilateral pneumonia after a long-standing bronchitis; great pain in the chest, with inflammatory fever; rusty viscid expectoration; pulse, 120; resp., 48 per minute; great dyspnoea; prostratio virium; dull percussion in both lateral sides of the chest. *Recovered*.

2. December 14, 1862. Barometer, 27·8; thermometer, 26°; ozonometer, 6; wind, north; stormy; dry; great electrical tension.

Margret, woman, married; age, 39. Ill, 14 days. Pneumonia of the left side; rusty sputa; great heat of the chest; crepitation in the subscapular region; dry, painful cough; strong pain in the left side; pulse, 110; resp., 42 per minute; great headache. *Recovered*.

3. December 16, 1862. Barometer, 28; thermometer, 28°; ozonometer, 6; wind, north; stormy; dry.

Strasbourg l'apparition du cholera aurait coïncidé avec l'absence d'ozone et cet element aurait reparu quand l'épidemic fut en décroissance. Enfin, selon le Docteur Guillard, qui a publié en 1855, dans le recueil Americain, 'Charles-ton Medical Journal,' un travail sur se sujet on aurait observé en Amerique une relation manifeste entre l'ozonisation de l'air et l'apparition des fièvres intermittentes."

John, fisherman; age, 38. Ill, 14 days. Pneumonia of the left side; great pain in the side and through the chest; crepitation in the left subclavicular region; sputa pneumonica extremely viscid; pulse, 125; great heat of the skin; resp., 39; headache; resistance on percussion on the lower part of the left side; inspiration much shortened. *Recovered.*

4. December 20, 1862. Barometer, 28·7; thermometer, 26°; ozonometer, 5; wind, north-west, with snow.

Katrin, maidservant; age, 52. Ill, 15 days. Pneumonia right side; great pain in the side; moist crepitation in the right subscapular and mammary regions; dry cough; viscid sputa, tinged with blood; pulse, 100; great heat of the skin; resistance on percussion, and dull sound all over the right side. *Recovered.*

5. January 1, 1863. Barometer, 28·8; thermometer, 26°; ozonometer, 6; wind, north-west, with snow.

Asgrim, workman; age, 62. Ill, 20 days. Pneumonia pulmonis dextri; great pain, dry cough; viscid rusty expectoration; skin very hot; dyspnœa; pulse, 100; respiration, 40; dry crepitation in the whole right side up to the fourth rib; dull sound on percussion, with resistance; inspiration laborious; much shortened; no chlorides in the urine. *Recovered.*

6. January 18, 1863. Barometer, 28·7; thermometer, 28°; ozonometer, 6; wind, north; stormy, dry.

Gudmund, fisherman; age, 24. Ill, 30 days. Peripneumonia; great pain across the chest; inflammatory fever; considerable prominence of the lower part of the left side; dry cough; crepitation in both subscapular regions; delirium at night; pulse, 110; respiration, 54; headache; hot skin; sputa pneumonica; resistance and dull sound on percussion in lateral region of the left side. *Recovered.*

7. March 1, 1863. Barometer, 28·8; thermometer, 26°; ozonometer, 6; wind, north-west; much snow, stormy.

Yngolf, fisherman; age, 44. Ill, 28 days. Peripneumonia of the right side, with great pain; inflammatory fever; dry, painful cough; considerable prominence of the lower part of the right side; egophony; percussion up to the fourth rib very dull; the disease was of five days' standing when I first saw the patient; pulse, 120; respiration, 48; great dyspnœa; skin extremely hot; delirium at night; fremissement in the intercostal spaces of the right side, between fourth and eighth ribs down that side. *Recovered.*

8. March 10, 1863. Barometer, 27·8; thermometer, 26°; ozonometer, 6; wind, north-west; stormy.

Pordur, fisherman; age, 22. Ill, 20 days. Pneumonia; pain in the chest; sputa pneumonica; strong fever; afterwards mucopurulent; great prostration; delirium at night. *Recovered.*

9. April 17, 1863. Barometer, 28·4; thermometer, 34°; ozonometer, 8; wind, east; dry.

Arni, workman; age, 27. Ill, 30 days. Pneumonia of the left side, with all the most dangerous symptoms of that disease; pleuritis of the right side, with effusion. When I saw him first he had been sick for four days. Scanty urine; no trace of chlorides in the urine. *Recovered.*

10. April 15, 1863. Barometer, 28·4; thermometer, 34°; ozonometer, 9; wind, north-east; dry.

Johanna, maidservant; age, 28. Ill, 15 days. Pneumonia of the left side; dry cough; pain in the chest; viscid rusty expectoration; pulse, 100; respiration, 42, with expanded nostrils; no chlorides in the urine; inspiration very short; expiration prolonged. *Recovered.*

11. April 15, 1863. Barometer, 28·4; thermometer, 34°; ozonometer, 9; wind, north-east; dry.

Jacob, student of the college; age, 18. Ill, 10 days. Pneumonia; left side; inflammatory fever; pain in the chest; crepitation in the left subscapular region; viscid rusty expectoration; headache; hot skin; pulse, 120; respiration, 42 per minute; inspiration very short; epistaxis; no chlorides in the urine. *Recovered.*

12. April 15, 1863. Barometer, 28·4; thermometer, 34°; ozonometer, 9; wind, north-east; dry.

Bjorn, fisherman; age, 49. Ill, 4 days. Bilateral pneumonia of four days' standing. When I saw the patient he was in the agony, and died shortly afterwards; but people told me that he had the day before been walking about. Autopsy. *Died.*

13. April 3, 1863. Barometer, 27·7; thermometer, 30°; ozonometer, 8; wind, south-east; dry.

Steinun, widow; age, 55. Ill, 16 days. Pneumonia of the left side after a long, lasting catarrhus; inflammatory fever; crepitation in left subscapular region; rusty expectoration; headache; great debility; pulse, 100; respiration, 48; great heat of the skin; delirium; dull percussion all over the left side; great dyspnoea, with expanded nostrils; anxiety; insomnia; hiccup. *Recovered.*

14. May 1, 1863. Barometer, 28·0; thermometer, 37°; ozonometer, 8; wind, south-west; dry.

Johnson, bookbinder; age, 45. Ill, 30 days. Pneumonia of the left side, with pleuritis; inflammatory fever; pulse, 120; respiration, 48, short, painful; great dyspnoea; pain augmented by pressing with the finger in the intercostal space; great anxiety; expectoration scanty, but rusty and viscid; delirium during the night; headache; urine scanty, red; tongue furred. *Recovered.*

15. May 2, 1863. Barometer, 28·8; thermometer, 37°; ozonometer, 8; wind, south-west; dry.

Maria, widow; age, 38. Ill, 18 days. Pneumonia bilateralis; high fever; hot skin, especially over the whole chest; great pain in the breast; dry cough, very painful; crepitation in both regiones subscapulares; respiration short, 52 in a minute; pulse, 104; headache; insomnia. *Recovered.*

16. May 18, 1863. Barometer, 29·3; thermometer, 42°; ozonometer, 8; wind, east; sky overcast.

Bilateral pneumonia after a long-standing chronic bronchitis; pain in the right side, below the nipple; dull sound on percussion of the lower part of both lateral sides, with considerable resistance; rusty sputum; great prostration; delirium; dyspnoea; pulse, 110, tremulous; no chlorides in the urine. Autopsy not permitted. *Died.*

17. May 21, 1863. Barometer, 29·7; thermometer, 40°; ozonometer, 8; wind, east; sky overcast.

Steingrim Johnson, student; age, 17. Ill, 9 days. Pneumonia of the right side; dull pain below the right nipple; cough; hurried respiration; pulse, 100; dusky sputa; dull sound and resistance in the right lateral region of the chest; tongue furred; crepitation in the right subscapular region; puerile respiration in the right subclavicular region, and in the whole left lung. *Recovered.*

18. May 27, 1863. Barometer, 29·4; thermometer, 37°; ozonometer, 8; wind, north-east; sky overcast.

Kristjan, fisherman; age, 30. Ill, 12 days. Pneumonia of the right side, of five days' standing; pain in the right part of the chest; inflammatory fever; pulse, 120; respiration, 50; dull percussion in the right lateral and mammary region; great resistance on percussion; rusty sputum, very tenacious; expanded nostrils; dry furred tongue; headache; insomnia; bronchophony in the right lateral region. *Recovered.*

19. May 27, 1863. Barometer, 29·4; thermometer, 39°; ozonometer, 8; wind, north-east.

Helgi, chimney-sweeper; age, 50. Ill, 3 days. Pneumonia of the right side; pain in the affected side, with inflammatory fever; pulse, 100; respiration, 44; cough; rusty sputum; crepitation in the right lateral and subscapular region; furred tongue; resistance and dull sound on percussion; delirium tremens; hiccup; facies Hippocratica. *Died.*

20. May 28, 1863. Barometer, 29·3; thermometer, 39°; ozonometer, 7; wind, east; sky overcast.

Gunnar, fisherman; age, 33. Ill, 12 days. Pneumonia of the right side,

with pleurisy; great pain in the right side, augmented by inspiration and pressure with the finger in the intercostal spaces; rusty sputum; high fever; pulse, 120; respiration, 50; dry tongue; immense thirst. *Recovered.*

21. May 28, 1863. Barometer, 29·3; thermometer, 40°; ozonometer, 7; wind, east; sky overcast.

Kristjan Gislason, fisherman; age, 38. Ill, 14 days. Bilateral pneumonia; inflammatory fever; dyspnoea; dull sound and augmented resistance in both lateral regions, where also moist crepitation was clear enough; rusty sputa; pulse, 110; respiration, 50; furred tongue; headache; insomnia. *Recovered.*

22. May 18, 1863. Barometer, 29·3; thermometer, 37°; ozonometer, 7; wind, east; dry.

Thorlak, fisherman; age, 39. Ill, 4 days. Pneumonia of the right side, of four days' standing. I saw this man first when he was dying, and the rhonchus of the agony had begun. Autopsy. *Died.*

23. May 29, 1863. Barometer, 29·3; thermometer, 37°; ozonometer, 7; wind, east; dry.

Einar, fisherman; age, 21. Ill, 21 days. Pneumonia, with pleurisy of the left lung; strong pain in the left side, augmented by inspiration; dry cough; rusty sputa; high fever; pulse, 120; respiration, 48, with expanded nostrils; traces of chlorides in the urine. *Recovered.*

24. May 29, 1863. Barometer, 29·3; thermometer, 37°; ozonometer, 7; wind, east; dry.

Porstein, male; age, 30. Ill, 4 days. Pneumonia bilateralis. I saw this patient first ten hours before his death, but I was told he had only been sick for two or three days. Autopsy not permitted. *Died.*

25. May 31, 1863. Barometer, 28·0; thermometer, 33°; ozonometer, 9; wind, west, heavy gale; dry.

Thordarson, lawyer; age, 38. Ill, 21 days. Peripneumonia of right side; inflammatory fever; hot skin; tongue furred; great pain in the right side, augmented by pressure in the intercostal spaces; hard dry cough, with scanty, rusty expectoration; crepitation in lateral region of right side; short inspiration; pulse, 110; resp., 48; delirium at night; strong headache. *Recovered.*

26. May 31, 1863. Barometer, 28·0; thermometer, 33°; ozonometer, 9; wind, west, heavy gale; dry.

Olafur, fisherman; age, 40. Ill, 14 days. Pneumonia of the right side; strong pain in the chest; dry cough; fever; headache; hot skin; scanty expectoration of a glairy fluid, tinged with blood; crepitation in the right lateral region; pulse, 120; respiration, 52. *Recovered.*

27. June 1, 1863. Barometer, 28·8; thermometer, 46°; ozonometer, 10; wind, west, heavy gale; dry.

Ari, merchant; age, 60. Ill, 21 days. Pneumonia of the right side; great pain at the right side of the sternum; rusty expectoration; inflammatory fever; crepitation over a great part of the right side; pulse, 112; respiration, 42; great prostration. *Recovered.* This patient, when recovered, died some weeks afterwards of gangrenous erysipelas.

28. June 2, 1863. Barometer, 28·7; thermometer, 44°; ozonometer, 9; wind, west; dry; heavy gale.

Simon, servant, male; age, 21. Ill, 16 days. Peripneumonia bilateralis; excessive fever on the third day, when I first saw him; pulse, 140; respiration, 56; great dyspnoea; scanty, yellow, and rusty expectoration; crepitation in both sides, in the regiones subscapularis, and lateral thoracic; great anxiety; headache; delirium during night; the costal pleura of the right side evidently inflamed, and the side prominent. *Recovered.*

29. June 2, 1863. Barometer, 28·7; thermometer, 44°; ozonometer, 9; wind, north-west; heavy gale.

Bjarni, servant, male; age, 35. Ill, 14 days. Pneumonia; fever; dry cough; sputa pneumonica; pulse, 100; respiration, 40; dry crepitation in the lower part of the right thoracic region; dull sound on percussion of the whole side. *Recovered.*

30. June 2, 1863. Barometer, 28·7; thermometer, 44°; ozonometer, 9; wind, north-west; heavy gale.

Hans, workman; age, 56. Ill, 12 days. Pneumonia of the right side; great pain; insomnia; mucous viscid sputa; dyspnoea; crepitation; dull sound on percussion; bronchophony; prominence of the right side. *Recovered.*

31. June 2, 1863. Barometer, 28·7; thermometer, 44°; ozonometer, 9; wind, north-west; heavy gale.

John, fisherman; age, 28. Ill, 15 days. Pneumonia of the whole right lung; inflammatory fever; pain in the chest; dry cough; crepitation all over the right lateral region of the chest; crepitant rhonchus; expanded nostrils; pulse, 116; respiration, 48. *Recovered.*

32. June 2, 1863. Barometer, 28·7; thermometer, 44°; ozonometer, 9; wind, north-west; heavy gale.

Kristjan, fisherman; age, 32. Ill, 12 days. Pneumonia of the right lung, complicated with pleurisy; inflammatory fever; great heat of the skin; pain below the right nipple; dull percussion; moist crepitant rhonchus; pulse, 120; respiration, 48; sputa pneumonica; egophony on the fourth day; prominence of the lower lateral region of the right side; delirium at night. *Recovered.*

33. June 2, 1863. Barometer, 28·7; thermometer, 44°; ozonometer, 9; wind, north-west; heavy gale.

John, fisherman; age, 34. Ill, 9 days. Peripneumonia of the left side; inflammatory fever; great pain; dry, hard cough; viscid, rusty expectoration; great heat of the skin; headache; crepitant rhonchus all over the left region lateral; pulse, 116; respiration, 48. *Recovered.*

34. June 3, 1863. Barometer, 28·4; thermometer, 44°; ozonometer, 9; wind, north-east.

Pordr, fisherman; age, 33. Ill, 12 days. Pneumonia, with pleurisy in the left side, of six days' standing; inflammatory fever; great pain in the left side; dull percussion; bronchial respiration and bronchophony in the lateral region; egophony in the left subscapular region; expectoration viscid, yellow, with dark coagula of blood; pulse, 100; respiration, 46. *Recovered.*

35. June 3, 1863. Barometer, 28·3; thermometer, 44°; ozonometer, 9; wind, north-east.

Gisli, workman; age, 30. Ill, 9 days. Pneumonia of the right lung; inflammatory fever; pulse, 100; pain beneath the right nipple; respiration, 46; crepitant rhonchus in the right subscapular region; viscid and rusty expectoration; great heat of the skin; expansion of the nostrils; anxiety; insomnia. *Recovered.*

36. June 3, 1863. Barometer, 28·7; thermometer, 44°; ozonometer, 9; wind, north-east.

Gisli, labourer; age, 38. Ill, 9 days. Pneumonia of the lower lobe, right side. This was a rather curious case. The patient, who is a drunkard, came up to me walking, with three days' standing pneumonia. He complained of great pain in the lower part of the right side, and the crepitant rhonchus was there clear enough; the percussion was dull, and the pain augmented by pressure on the intercostal spaces. The cough was dry, but not very frequent; the expectoration of yellow-red colour; pulse, 94; resp., 38 per minute. *Recovered.*

37. June 3, 1863. Barometer, 28·4; thermometer, 44°; ozonometer, 9; wind, north-east.

Valgard, fisherman; age, 63. Ill, 21 days. Pneumonia of the right lung, of four days' standing; great pain across the chest, below the right nipple; dyspnoea; expanded nostrils; bronchial respiration in the lower part of the right side; crepitation beneath clavicle, and in the scapular region; sputa pneumonica; delirium at night; headache; pulse, 110; resp., 48; inspiration of equal length with expiration; the countenance of anxious expression. *Recovered.*

38. June 4, 1863. Barometer, 28·7; thermometer, 42°; ozonometer, 10; wind, calm; dry.

Olöf, widow; age 61. Ill, 16 days. Pneumonia, complicated with chronic bronchitis; inflammatory fever; pulse, 100; resp., 48, very laborious; crepitant rhonchus in the lateral and subscapular regions of the right side; sibilant rhonchus in the left side. *Recovered.*

39. June 4, 1863. Barometer, 28·7; thermometer, 42°; ozonometer, 10; wind, calm; dry.

Thord, labourer; age, 27. Ill, 10 days. Pneumonia, with pleurisy of both sides; inflammatory fever; pulse, 120; resp., 52; great pain across the chest; scanty, high-coloured urine; orthopnoea; hiccup; pain augmented by pressure in both lateral regions of the chest. *Recovered.*

40. June 5, 1863. Barometer, 28·7; thermometer, 43°; ozonometer, 9; wind, north-east; rain.

Helgi, schoolmaster; age, 31. Ill, 14 days. Pneumonia pulmonis dextri, after a long-standing chronic bronchitis; inflammatory fever; skin hot; headache; pulse, 110; resp., 46; flushed face; great debility; crepitant rhonchus of the right side, sibilant on the left. *Recovered.*

41. June 5, 1863. Barometer, 28·7; thermometer, 43°; ozonometer, 9; wind, north-east; rain.

Haldóra, maid-servant; age, 24. Ill, 18 days. Pneumonia pulmonis sinistri; high fever; pulse, 100; resp., 44; pain about the left nipple, across the chest; glairy expectoration, mingled with blood; crepitation in the left lateral and subscapular region. *Recovered.*

42. June 5, 1863. Barometer, 28·7; thermometer, 43°; ozonometer, 9; wind, north-east; rain.

Gróa, maid-servant; age, 21. Ill, 9 days. Pneumonia pulmonis dextri; high fever; cough; great pain in the chest, below the right nipple; crepitation in the right lateral region; expanded nostrils; rusty-coloured viscid sputum; pain, augmented by pressure in the intercostal spaces; urine high-coloured.

43. June 5, 1863. Barometer, 28·7; thermometer, 43°; ozonometer, 9; wind, north east; rain.

Illugi, fisherman; age, 54. Ill, 12 days. Bilateral pneumonia, complicated with pleurisy of seven days' standing when I first saw the patient; high fever; flushed face; great dyspnoea; resp., 52; great anxiety; delirium; bronchophony and bronchial respiration in both lateral and subscapular regions; hiccup; intermittent, irregular pulse. Autopsy not permitted. *Died.*

44. June 5, 1863. Barometer, 28·7; thermometer, 43°; ozonometer, 9; wind, north-east; rain.

John, fisherman; age, 28. Ill, 14 days. Peripneumonia of the right side, of six days' standing; high fever; great prostration; face pale; pulse 120, feeble; resp., 48; dyspnoea; rusty-coloured viscid expectoration; delirium at night; bronchophony and bronchial respiration; pain, augmented by pressure in the intercostal spaces; hiccup. *Recovered.*

45. June 6, 1863. Barometer, 28·7; thermometer, 42°; ozonometer, 9; wind, west; dry, storm.

Sigridur, female child; age, 6. Ill, 10 days. Pneumonia of the left side, of four days' standing; high fever; hurried respiration, about 48; subcrepitant rhonchus in the lateral region of the left side; yellow, brown, viscid expectoration. *Recovered.*

46. June 7, 1863. Barometer, 28·0; thermometer, 46°; ozonometer, 10; wind, west; dry, stormy.

Hallgrim, workman; age, 24. Ill, 14 days. Peripneumonia pulmonis dextri; inflammatory fever; pain below the right nipple, aggravated by cough and inspiration, as also by pressure in the intercostal spaces of the right side; dry short cough; resp., 44; rusty-coloured, viscid expectoration; high-coloured urine; restricted breathing; no chlorides in the urine. *Recovered.*

47. June 8, 1863. Barometer, 28; thermometer, 44°; ozonometer, 9; wind, west; dry.

Pjetur, fisherman; age, 34. Ill, 10 days. Peripneumonia pulmonis dextri;

high fever; pulse 116, hard; great pain below the right nipple, aggravated by cough and pressure in the intercostal spaces; resp., 50; crepitation in the right lateral region of the chest; rusty-coloured viscid expectoration; urine scanty, high-coloured, with very little traces of chlorides. *Recovered.*

48. June 8, 1863. Barometer, 28; thermometer, 44°; ozonometer, 9; wind, west; dry.

Scheving, widow; age, 67. Ill, 28 days. Pneumonia bilateralis, with chronic bronchitis; high fever; pain in the chest; cough, with tenacious sputa; great heat of the chest; insomnia; dull sound on percussion, with resistance all over the left side, sonorous crepitation. *Recovered.*

49. June 8, 1863. Barometer, 28; thermometer, 44°; ozonometer, 9; wind, west; dry.

Runolfur, male; age, 28. Ill, 14 days. Pneumonia of the right side; inflammatory fever; pain beneath the right nipple; great resistance all over the right lateral side; rusty viscid sputa; crepitation in all the lower part of the right side; pulse, 110; expanded nostrils; scanty, high-coloured urine; can only lie on his back. *Recovered.*

50. June 10, 1863. Barometer, 28·9; thermometer, 46°; ozonometer, 9; wind, south-east; dry.

Kristin, widow; age, 69. Ill, 4 days. Bilateral pneumonia after a long-lasting chronic bronchitis; visited when *in extremis*; autopsy not permitted; first seen when *in extremis*. *Died.*

51. June 10, 1863. Barometer, 28·9; thermometer, 46°; ozonometer, 9; wind, south-east, dry.

Pjetur, male child; age, 2. Ill, 7 days. Pneumonia of the right lung; fever; cough; hurried respiration; subcrepitation; rhonchus in the right side. *Recovered.*

52. June 10, 1863. Barometer, 28·9; thermometer, 46°; ozonometer, 9; wind, south-east; dry.

Olöf, widow; age, 57. Ill, 14 days. Bilateral pneumonia after a long-standing chronic bronchitis; high fever; pulse, 110; resp., 44; rusty-coloured viscid expectoration; expanding nostrils; bronchial respiration, and bronchophonia in both lateral regions. The disease was, when I visited her, of four or five days' standing. *Recovered.*

53. June 11, 1863. Barometer, 28·9; thermometer, 44°; ozonometer, 9; wind, north-west; dry.

Sigrídur, female; age, 52. Ill, 14 days. Pneumonia with pleuritis of the right side; inflammatory fever; great pain below the right nipple, aggravated by inspiration and pressure in the intercostal spaces; yellow and rusty-coloured expectoration; scanty, high-coloured urine. *Recovered.*

54. June 11, 1863. Barometer, 28·9; thermometer, 44°; ozonometer, 9; wind, north-west; dry.

Johnas, fisherman; age, 26. Ill, 13 days. Pneumonia pulmonis dextri; high fever; pulse, 112, hard and tense; great pain below the right nipple; dyspnoea; crepitation in the lateral and subscapular regions; dull percussion; viscid rusty-coloured expectoration; delirium during the night; excessive headache; great heat of the skin; scanty, high-coloured urine; no chlorides could be detected in it. *Recovered.*

55. June 11, 1863. Barometer, 28·9; thermometer, 44°; ozonometer, 9; wind, north-west; dry.

Gudmundur, fisherman; age, 32. Ill, 13 days. Pneumonia pulmonis dextri; high fever; hot skin; headache and anorexia; pain in the right side, augmented by cough and inspiration; expiration prolonged; dry crepitant rhonchus in the right lateral region; rusty-coloured sputum; puerile respiration in the left side; pulse, 108; resp., 42; expanded nostrils; restricted breathing. *Recovered.*

56. June 11, 1863. Barometer, 28·9; thermometer, 44°; ozonometer, 9; wind, north-west; dry.

John, boy; age, 5. Ill, 7 days. Pneumonia of the right side; high fever; flushed face; pain in the right side of the chest. *Recovered.*

57. June 14, 1863. Barometer, 28·9; thermometer, 47°; ozonometer, 9; wind, north-east; dry.

Einar, workman; age, 32. Ill, 11 days. Peripneumonia of the left side; high fever; pulse, 130; flushed face; severe pain in the left side of the chest; resp., 50; expiration prolonged; dry crepitation all over the lateral region; percussion dull, with resistance; restricted breathing; headache; insomnia. *Recovered.*

58. June 14, 1863. Barometer, 28·9; thermometer, 47°; ozonometer, 9; wind, north-east; dry.

Geir, shoemaker; age, 46. Ill, 6 days. Bilateral pneumonia of four days' standing; a drunkard; high fever, with delirium tremens; great dyspnoea; skin moist, but very hot; countenance expressing much anxiety; pulse, 150; resp., 48; bronchial respiration; in both regiones laterales of the chest. Autopsy. *Died.*

59. June 14, 1863. Barometer, 28·9; thermometer, 47°; ozonometer, 9; wind, north-east; dry.

Ragnhild, maidservant; age, 32. Ill, 14 days. Bilateral pneumonia; high fever; great pain across the chest, augmented by cough and inspiration; dry crepitation in both lateral regions of the chest; prolonged expiration; rusty-coloured sputum; pulse, 120; resp., 38; urine scanty, and high red coloured. *Recovered.*

60. June 16, 1863. Barometer, 29·2; thermometer, 50°; ozonometer, 9; wind, north-west; dry.

Thordarson, wife of the bishop; age, 68. Ill, 16 days. Pneumonia, with pleurisy of the right side; high fever; pulse, 130; resp., 46; dyspnoea; dull percussion in the right infra-mammarian region, with moist crepitant rhonchus; rusty-coloured viscid sputum; the pain below the right nipple much augmented by pressure in the intercostal spaces; puerile respiration in the left lung; insomnia; furred tongue; anorexia; great anxiety; and delirium at night. *Recovered.*

61. June 16, 1863. Barometer, 29·2; thermometer, 50°; ozonometer 9; wind, north-west; dry.

Porkell, fisherman; age, 28. Ill, 14 days. Pneumonia pulmonis dextri, with pleurisy; high fever; severe pain below the right nipple; rusty-coloured sputum; dyspnoea; resp., 40; scanty, red-coloured urine; painful cough; tongue furred. *Recovered.*

62. June 19, 1863. Barometer, 29; thermometer, 48°; ozonometer, 6; wind, north-west; stormy; dry.

Gudmundur, male; age, 24. Ill, 12 days. Pneumonia pulmonis dextri, of three days' standing; fever; pain beneath the right nipple; dry cough; rusty-coloured sputum; crepitation in the lower part of the right lateral region; restricted breathing. *Recovered.*

63. June 20, 1863. Barometer, 28·9; thermometer, 48°; ozonometer, 7; wind, north-west; stormy; dry.

Benedikt, lawyer; age, 29. Ill, 14 days. Pneumonia pulmonis dextri, of three days' standing; high fever; pulse, 120; resp., 38; great pain below the right nipple; rusty-coloured expectoration. *Recovered.*

64. June 20, 1863. Barometer, 28·9; thermometer, 48°; ozonometer, 7; wind, north-west; stormy; dry.

Margareth, girl; age, 18. Ill, 9 days. Pneumonia pulmonis dextri; high fever; pain beneath the right nipple, aggravated by cough and inspiration; yellow, viscid sputum; crepitant rhonchus in the right subscapular region; puerile respiration in the left lung; resp., 40; headache and insomnia; no chlorides in the urine. *Recovered.*

65. June 21, 1863. Barometer, 28; thermometer, 54°; ozonometer, 9; wind, east; dry.

Hjalmarson, physician; age, 53. Ill, 18 days. Pneumonia, with pleurisy of the left side, of four days' standing, when I first examined the sick; inflammatory fever; pulse, 100; pain in the lower part of the left side; percussion dull; pain, aggravated by pressure, in the intercostal spaces of the affected side.

No respiratory murmur to be heard, neither in the lateral nor in the subscapular region of the affected side; some dyspnoea; resp., 38; expiration prolonged; urine high-coloured, scanty, depositing phosphates; furred tongue; anorexia; dry cough; viscid, rusty-coloured expectoration; constipation. *Recovered.*

66. June 24, 1863. Barometer, 28·7; thermometer, 48°; ozonometer, 9; wind, east; dry.

Gislason, male; age, 43. Ill, 21 days. Pneumonia bilateralis in a very robust man; great pain below the right nipple, aggravated by cough and inspiration; pulse, about 100; resp., 40; rusty-coloured sputum; expanded nostrils; no chlorides in the urine. *Recovered.*

67. June 24, 1863. Barometer, 28·7; thermometer, 48°; ozonometer, 9; wind, east; dry.

Jonasson, male; age, 33. Ill, 9 days. Pneumonia pulmonis dextri; fever; pulse, 100; pain below the right nipple; resp., 36; dull sound on percussion in the right lateral region of the chest; viscid sputum; crepitation in the right subscapular region; puerile respiration in the right subclavicular region, and in the left side; expanded nostrils. *Recovered.*

68. June 24, 1863. Barometer, 28·7; thermometer, 48°; ozonometer, 9; wind, east; dry.

John, fisherman; age, 21. Ill, 12 days. Pneumonia pulmonis dextri; fever; cough; pain beneath the right nipple, of three days' standing; pulse, 120; resp., 38; crepitant rhonchus in the whole right lateral and axillary region; rusty-coloured sputum; furred tongue; anorexia; no chlorides in the urine. *Recovered.*

69. June 24, 1863. Barometer, 28·7; thermometer, 48°; ozonometer, 9; wind, east; dry.

Magnus, fisherman; age, 33. Ill, 21 days. Pneumonia pulmonis dextri; fever; cough; pain beneath the right nipple; rusty-coloured sputa; percussion of the right side, with a considerable resistance and dull sound; pulse, 110; resp., 44; expanded nostrils; furred tongue. *Recovered.*

70. June 24, 1863. Barometer, 28·7; thermometer, 48°; ozonometer, 9; wind, east; dry.

Gudbjorg, maidservant; age, 20. Ill, 10 days. Pneumonia, with pleurisy of the left side; pain in the left side resembling pleurodynia, but the percussion gave a dull sound, and was much aggravated by cough and inspiration; no respiratory murmur could be heard in the lateral or subscapular region of this side, but there was dry crepitation in the left subclavicular region, associated with viscid, rusty-coloured expectoration; pulse, 116; resp., 40; dyspnoea. By adding a solution of nitrate of silver to the urine in the test-tube, only traces of chlorides appeared. *Recovered.*

71. July 6, 1863. Barometer, 28·9; thermometer, 46°; ozonometer, 9; wind, south; sky overcast.

Grímur, fisherman; age, 46. Ill, 5 days. Bilateral pneumonia, of four days' standing; a drunkard; high fever; rusty-coloured copious viscid sputa; bronchophonia of both lateral regions of the chest; delirium; pulse, 140; crepitant rhonchus in both infraclavicular regions; no chlorides in the urine; tremor. Autopsy not permitted. *Died.*

72. July 7, 1863. Barometer, 28·6; thermometer, 45°; ozonometer, 9; wind, south-east.

Gudrun, widow; age, 62. Ill, 28 days. Pneumonia of the left side; high fever; pain in the right side, beneath the nipple; short cough; mucous expectoration tinged with blood; great dyspnoea; great vocal resonance in the right side; expanding of the nostrils. *Recovered.*

73. July 7, 1863. Barometer, 28·6; thermometer, 45°; ozonometer, 9; wind, south-east.

John, peasant; age, 34. Ill, 14 days. Pneumonia, with pleurisy of the right side, of five days' standing; inflammatory fever; pain beneath the right nipple, and in the whole lower part of the right side; egophony all over the lower part of the lateral region; bronchophonia in the right mammary region;

pulse, 116, hard; resp., 40; sputum copious, glairy, and brown-red; headache; delirium and insomnia; only traces of chlorides in the urine. *Recovered.*

74. July 9, 1863. Barometer, 28·4; thermometer, 44°; ozonometer, 9; wind, south-west; dry.

Kristjan, peasant, male; age, 40. Ill, 14 days. Pneumonia of the left side; inflammatory fever; pulse, 100; hard cough; respiration frequent; crepitation in the mammary region; hot skin; mucous brown sputum; anorexia; tongue furred. *Recovered.*

75. July 9, 1863. Barometer, 28·4; thermometer, 45; ozonometer, 9; wind, south-west; dry.

Vigfus, peasant, male; age, 23. Ill, 21 days. Pneumonia of the right side, complicated with a hydatid tumour in the liver; fever; rusty sputum; dull sound in all the higher lateral region of the right side; bronchial respiration and bronchophony in that side. Died afterwards in consequence of a hydatid tumour in the abdomen. *Recovered.*

76. July 9, 1863. Barometer, 28·4; thermometer, 43°; ozonometer, 9; wind, south-west; dry.

Gudbjoro, maidservant; age, 20. Ill, 14 days. Pneumonia of the right side, of five days' standing; inflammatory fever; cough; pain in the lower part of the right lateral region; dyspnoea; rusty sputum; bronchophonia and bronchial respiration in the affected side; resp., 40; expiration prolonged; expanded nostrils.

77. July 10, 1863. Barometer, 29·2; thermometer, 50°; ozonometer, 8; wind, south-west; rain.

Steingerdr, maidservant; age, 20. Ill, 10 days. Pneumonia of the left side; pain in the side; cough; rusty expectoration; dyspnoea.

78. July 30, 1863. Katrin, married female; age, 28. Ill, 28 days. Pneumonia of the right side, of ten days' standing; the patient had for a long time been affected with chronic bronchitis; very little fever; mucous yellow sputum, with moist cough; egophonia in the lower part of the right side. *Recovered.*

79. September 18, 1863. Barometer, 27·8; thermometer, 39°; ozonometer, 6; wind, south-west; rain.

Steindor, peasant, male; age, 34. Ill, 11 days. Pneumonia of the right side, of four days' standing; inflammatory fever; great pain beneath the right nipple; dull sound on percussion in the whole right lateral region; resonance of the voice in the lower part of that side. *Recovered.*

80. October 8, 1863. Vigdys, married female; age, 33. Ill, 10 days. Pneumonia of the left side of six days' standing; high fever; cough, with copious expectoration of glairy mucus; bronchophonia in the whole lateral region; mucous crepitation in the subclavicular region; restricted breathing; expanded nostrils.

As has been here pointed out, four autopsies were made during the epidemic, one of them of No. 12 showed a peripneumonia of the whole right lung, which was found in a state of red hepatitis; there was also found an extensive inflammation both of the costal and pulmonary pleura. A large mass of coagulated lymph covered the diaphragmal pleura, floating in a considerable quantity of dark-coloured bloody serum. Filaments of coagulated lymph were seen running between the pulmonary and costal portion of the pleura, and the upper end of the lobus medius had some impressions of the ribs. The pulmonary artery was gorged with blood, and the right ventricle of the heart contained large coagula. By cutting into the lung, small red granulations were seen by the glass everywhere, and even the larger bronchial ramifications showed a marked congestion of the mucous membrane. It was in this case evident that

not only the costal and pulmonary pleura, but also the whole substance of the lung,—viz., the air-vesicles, the interstitial tissue, and the mucous membrane of the bronchi, had been in a state of congestion and inflammation.

The autopsy of No. 22 showed a complete hepatisation of the whole right lung; the costal and pulmonary pleura were covered with a thick layer of coagulated lymph, and the semigelatinous effusion could be stripped up from the serous membrane. By cutting in the lower lobe of the right lung, this part was found in a state of great hepatisation, while the upper lobes were in a condition of red hepatisation and splenisation.

No. 58 was opened twenty-four hours after his death; the two lower lobes of the right lung were in a state of grey hepatisation, and both these lobes were adherent to the costal pleura; the left lung was also in a state of congestion, and the lower part of the right lobus inferior showed undoubtful marks of red hepatisation, and had therefore been inflamed at a later period than the right lung. A considerable quantity of red serum was also found in the pleural cavity.

The fourth autopsy was made on a man, suddenly dead, in one of the shops. I was summoned to him in a hurry, and found him lying lifeless on the floor of the shop. The people who were with him told me that he had the same morning (this happened about two o'clock in the afternoon) complained of pain in his right side, with painful short cough; he had been feeble-looking, but they thought this might have risen from his bad habit of drinking brandy. The man was young, about thirty years, and nobody knew any reason of his sudden departure from this life. I advised the sheriff to let me open the cadaver, in order to get assured of the real cause of death; and, accordingly, the autopsy was made about sixteen hours after the death. In opening the cavity of the chest a considerable sero sanguineous effusion was found in the right pleural sac, and the lower part of the right costal pleura was evidently inflamed, as also the lower lobe of the right lung was in a state of congestion. No other lesion was to be found in the body; and it seemed, therefore, most likely that the pulmonary congestion had in this case, on account of the young patient's bad habit of drinking, caused the sudden death by a sort of pulmonary apoplexy; and this supposition was much strengthened by a conspicuous sero-sanguinolent effusion in the air-vesicles and smaller tubes of both lungs, especially in the lower lobes, and about the inferior margin of both lungs.

I will now make some remarks on my treatment of this epidemic disease; but before so doing, I shall in few lines openly tell my thoughts and describe my own experience regarding the treatment of pneumonia. When I studied the clinical medicine in the years 1832-37, the bloodletting controversy had not yet begun, and the best Danish and German professors and practitioners seemed at that time very much inclined to considerable bloodletting, both in pleuritis and pneumonia, and to look upon it as the chief remedy in

these complaints. In the first years of my medical practice I followed my preceptors' advice, although it often seemed to me that severe loss of blood weakened the patient's strength too much, so I early thought it advisable to moderate the use of the lancet; and by-and-by I got strongly convinced of the practical rule given by Celsus in his Treatment of Pneumonia, where he says "*Oportet si satis validæ vires sunt, sanguinem mittere; sin minores cucurbitulas sine ferro præcordiis admovere.*"¹ This I thought an excellent rule, and best in accord with sound rational pathology and therapy. In 1842, I was sent, by the Danish Government, into Germany, in order to investigate the results of the hydrotherapy, which at that time was making considerable progress in the water-cure establishments of Germany, but was still little known in Scandinavia. I visited Gräfenberg, and many other water-cure establishments in Germany, and it struck me how successful some water-doctors were in their treatment of acute inflammations in the organs of the abdominal and pectoral cavities. Bloodletting was by these doctors—of whom some were indeed very well-instructed medical men—quite banished; but according to my own observations, they were, nevertheless, exceedingly fortunate in their treatment of several inflammations and pneumonia. In a water-cure place called Elgersburgh, situated in Saxe-Gotha, I saw one Dr Pjutti, a very learned German physician, treating acute pneumonia by the water-cure with complete success in a time of six days, without loss of any drop of blood, and more cases of the same kind came to my notice. Especially, I was struck by the sudden cure of some of these cases, which generally only lasted from five to seven days; but I found this in accordance with Van Helmont's doctrine, for he said, "*Qui venæ sectione debilitantur in morbis plerumque destituuntur crisi, et si a morbo resurgunt, paullatim multisque anxietatibus convalescunt, longa dierum serie, et non sine metu recidivarum.*" Meditating over this subject by several incident cases, I thought it in the meantime hardly advisable to follow the practice of the water-doctors, for I was inclined to believe that their successful treatment of pneumonia might, to a good deal, depend on its more benignant or mild nature during the summer months in Germany; two or three of them had been traumatic, and this might render them more fit for the cold-water cure, as traumatic pneumonias are often less dangerous than pneumonias occasioned by cold air, or some still little-known internal cause. On account of this I still continued my former treatment in all the pneumonias that came under my care; but this treatment consisted in a moderate bloodletting in the beginning, and the use of calomel according to the method of the late Professors Vogel and Horn, and I got persuaded that this method was far preferable to the treatment by *tartarus stibiatus*. My belief in calomel became still stronger when I had read the Clinical Lectures of Professor Graves, which I first saw a good deal of, translated

¹ Cornelius, Celsus de Medicina, lib. iv. caput vii.

into the German language, during the years 1846 and 1848. In 1850, a German book on the acute pneumonia, written by Dr Max Wittich, fell into my hands, and while the doctrines of this medical man were in accordance with my own thoughts and experience, I read it with great pleasure. Dr Max Wittich is a great enemy of bloodletting in this disease, and his arguments are, in my opinion, wholly as strong against it as those of late brought forward by Professor Dietl and Professor Hughes Bennett. But although Dr Wittich's treatment of pneumonia strengthened my belief in that remedy, I could not partake in his hatred against bloodletting in every case; and in that point he seemed to go too far.

Last year I got the newly printed French translation of Professor Graves' Clinical Lectures; and first then I became wholly acquainted with the views of Professor Hughes Bennett regarding bloodletting in inflammations, the translator, Dr Jaccoud, having fully, in a note to pages 93-95 of this work, exposed the doctrine of this eminent man. But this seemed, in my opinion, nothing more than a farther step in similar doctrines exposed and defended by the old Dr Van Helmont, Dr Wittich, and Professor Dietl. Of course, Professor Hughes Bennett has brought more clear arguments in favour of his opinion than his predecessors; but whether they will hold good in time to come or not, is very doubtful. The arguments this author, like Professor Dietl, has borrowed from the homœopathic treatment of pneumonia are at least of little value to those who are acquainted with the homœopathic jargon, and it makes me really wonder that learned and eminent men like Professor Dietl and Professor Hughes Bennett, will rely on diagnosis made out by such men as the homœopaths generally have showed themselves to be.

When our epidemic pneumonia had raged here for some time, I got the Clinical Lectures of Professor H. Bennett. I began instantly to read them with eagerness,—and what medical man will not read them with great pleasure,—even his views on bloodletting in the treatment of pneumonia; but to tell the truth, they were as unable to convince me of the inutility of bloodletting as the former arguments of the same kind had been before. I hope I have clearly shown the circumstances in my life which formerly made me inclined to no light degree of scepticism regarding the usefulness of bloodletting in pneumonia. Many cases came in the meantime which convinced me of the necessity of bloodletting in the severer cases of this disease; and those cases were in this our epidemic far more numerous than I formerly would have expected. It is no doubt that it may be a rare occurrence in the warmer climates of Europe, to see healthy and strong people so rapidly affected by a pulmonary inflammation, that death follows in two or three days; but this happened very often in our epidemic, and was the general rule where the disease was left alone. I saw several, even young, strong, and healthy people, who the day before the attack were at their work without any complaint, but who next day were nearly breath-

less, with all the symptoms of the most acute pleuro-pneumonia. I know a parish in the interior of our country with only 300 souls, where nineteen persons died thus affected in a very short time ; and I shall afterwards point out some parishes where this disease made some frightful ravages. Having been more than sixteen years in foreign countries, I never saw any case of pneumonia which could be compared with the common cases of this our epidemic. It is clear to me, that medical men who are accustomed to treat the ordinary sporadic pneumonias as they have occurred of late, will hardly have any idea of this disease being so acute and malignant as it really was. It would no doubt have been a good lesson for the medical men of the nothing-doing treatment to see the ravages of this frightful disease amongst the helpless inhabitants in all the parishes where no medical aid was to be had, and they would have been able to see that their healing process of nature, which they call the natural progress, is in a really acute and malignant occurrence of this disease, generally death and nothing but death. In order to make this clearly out, I asked several of the clergymen of those parishes where little or no medical aid could be had,¹ to give me an account of the cases of pneumonia which might occur in their neighbourhood, and some of them did this with due accuracy. From these accounts it was clear enough, that nearly all the patients who were without any medical aid died in three to six days. Thus, in the parish of Gardar, with about 1200 souls, and where medical aid seldom could be had, out of twenty-four patients seventeen died. In the parish of Utskalar, with 900 souls, where nineteen fell sick, and where medical aid could not be obtained, eleven died. In the parish of Kalfatjorn, with 800 souls, nearly all the affected, their number being fourteen, died ; and such has the result been everywhere in all those parishes which have been destitute of medical interference.

The reader will probably, from the aforesaid, guess that I had no predilection for bloodletting in pulmonary inflammations ; and I must confess, that I, in the beginning, in this epidemic made use of the lancet with some hesitation ; but the experience very soon taught me that the bloodletting was more necessary in this sort of pneumonia than I had anticipated. The insupportable pain beneath the right nipple, across the chest,—the great dyspnœa, which in some diseased seemed to threaten with imminent danger,—the disturbed balance in the circulation,—were generally greatly relieved ; and the hard incompressible but often irregular pulse became more regular after the loss of eight to twelve ounces of blood. The relief thus

¹ Iceland has, as yet, only eight medical men ; and this little number naturally cannot be everywhere in an island considerably larger than Ireland. A great deal of patients must, therefore, die without any medical aid. The clergymen are, on the contrary, very numerous,—about 180 in number,—and being for the most part well-educated men, they are able to aid us in the vital statistics of their native country. Many of them are also well instructed in popular physic.

obtained was not always momentary, but could last for several hours, or even one day; and although the rapid and dangerous pulmonary congestion could by no means be subdued by this remedy, it was evidently of great service to calm the storm until it could be lowered by other means, as by the use of calomel, which I, in all dangerous cases, according to my former custom, made a bold use of until the gums began to be a little touched.

I am at this opportunity bound to enter a little into the blood-letting controversy in order to give some reason for my practice in this malignant epidemic. The theories of the anti-bloodletting practitioners, as well as their arguments, are well known to me; and I sincerely confess, that I was at one time rather inclined to the practice of Dietl, the Vienna professor. But experience has somewhat changed my mind; and although I still confess that the ordinary sporadic broncho-pneumonias may be cured according to the views of Dietl and H. Bennett, their treatment would hardly be advisable in an epidemic like that here spoken of. I am, moreover, convinced of the real necessity of bloodletting in dangerous and acute pneumonia in plethoric patients; and although this necessity may seem in contradiction with some physiological *accepta*, it may be showed to be in good accordance with well-known hydrostatical laws. Let us for a moment cast a glance on the hydrostatics of the arterial and venous circulation during severe pneumonia, when one or both lungs are in a state of continuous congestion or inflammation: the venous blood must necessarily be much retarded on its course onwards through their tissue; it has only a free passage to the right side of the heart; but there it must evidently meet an obstacle. By this obstacle the balance between the venous and arterial heart must be disturbed; and it is, no doubt, on this account that we can feel the apex of the heart beating unusually strongly against the ribs of the right side of sternum. In this state of matters, the radial pulse will, in the beginning of the pulmonary congestion, be hard and full, and not easily compressible; but as the inflammation steps forward, and the throng in the right side of the heart is augmented, the radial pulse at the wrist gets weakened and somewhat irregular, and this disturbance in the venous circulation is well marked upon the patient's flushed face, which is studded with venous congestion. Bloodletting will, under this state of things, make a favourable change in the balance of the circulation; the pulse becomes more regular or free, while the flushed face gets a more sound or natural colour, and loses its anxious expression. The dyspnœa and the pain in the chest are mitigated also; and nobody can deny that the patient is very much relieved. But although this relief often may be of a shorter duration than we could wish, time is gained for other effectual remedies, and our task to save the diseased will be more safe and easy. Moreover, what harm can be done to the diseased by thus proceeding? The loss of eight to twelve ounces of the viscid dark-coloured unhealthy blood

cannot do much harm; for if this loss does not lessen the transudation of liquor sanguinis in the lungs, it can scarcely make it worse. If the digestion is in a tolerably good condition, we all know how soon blood may be reproduced, even after great loss of this liquor. But it is evident that due respect ought always to be had to the constitution of the patient, and the golden rule of Celsus, "*Si vires satis validæ sunt*," should never be forgot; as we, on the other hand, have good reason to cup the weak instead of bleeding them. Having read Professor Alison's reflections on bloodletting, printed in the Edinburgh Medical Journal of March 1856, I must confess that my ideas on the bloodletting controversy are very nearly in accordance with his opinion; and I have, moreover, no doubt that changes have taken place, and will still continue to take place, in the nature of inflammation and many other diseases; and it seems to me that the remarks of the aforesaid professor, as well as those of Professor Christison, in the Edinburgh Medical Journal of January 1858, are of great value to the history of medicine. Professor W. T. Gairdner has also, in his highly valuable Clinical Medicine, printed in Edinburgh last year, page 36-40, put down several conclusions regarding the bloodletting in pneumonia, which, by every experienced practitioner, must be looked upon as the best-founded propositions on this subject. The arguments set forth by this learned medical writer are so clear and decisive that they will most probably stand every criticism.

When the learned Professor H. Bennett insists upon that inflammation is the same now that it has ever been, and asks us if injuries on living bodies are in any way different now-a-days from that which took place in the days of Cullen and Gregory?—when he asks us, whether the effects which followed the wounds received at the battle of the Alma, could be different from those that resulted from similar injuries at the battle of Waterloo?—we may answer him in this way,—Oh, yes; they might have been very different; but whether they have been so or not, the history only can show us. We have humbly to put this learned professor in mind of the difference of accidents following insignificant operations, when the *constitutio epidemica* is unfavourable, from that which follows like injuries when this *constitutio* is favourable. The well-known history of *erysipelas ambulans* from 1842-46, and many even more striking facts in the history of diseases, may elucidate this in the clearest manner. The *metروperitonitis parturientium* has of late shown the difference of inflammation according to the aerial constitution; and in this respect we may fairly ask the Professor, why were the consequences of labour in the year 1838 in Paris more dangerous than the year before or some years afterwards? and, why are women lying in, during some years, more exposed to the dangerous sort of *metروperitonitis* than else? That it is so is an historical fact; and facts are stubborn things. If we deny the evidence of a certain *constitutio epidemica* varying very much in some years, we shall

deny the clearest fact in the whole medical history. It is in vain to struggle against the well-observed facts of history, and it is certainly more becoming for an excellent learned pathologist, as Professor Hughes Bennett shows himself to be, to elucidate medical facts than to deny them. I have read his *Principles and Practice of Medicine* with the greatest pleasure, and I am inclined to think that he is one of the greatest pathologists of our time; but, nevertheless, I cannot agree with him in some of his propositions. But, alas! it is the human lot to make mistake, and great men are also subjected to error. Before concluding these remarks on our epidemic, I will speak a little more of this subject.

I shall now say a few words more on my mercurial treatment, which in all severe cases was anteceded by a venesection of eight to twelve ounces of blood drawn from the arm.

As I have mentioned before, I have been accustomed to use calomel against all severe pneumonias, and that with good success. I have, as aforesaid, up to this year not lost a single patient by this disease. No wonder, therefore, that I, during this epidemic, was unwilling to abandon that remedy, although I knew very well that some modern physicians have either preferred tartar emetic or no physic at all. My belief in this remedy was strengthened, both by the experience of Dr Wittich (who, out of 80 patients affected with pneumonia, had not lost a single one), and by the authority of the late Professor Graves, whose *Clinical Lectures* have been my favourite book. It will, I think, also be found that several of the most renowned physicians of our century have unanimously looked upon calomel as the most heroic remedy in all acute and dangerous cases of pneumonia. Grisolle, speaking of it, says: "J'ai vu en effet nombre de fois la resolution s'opérer assez promptement après l'emploi du calomel;" but he adds, "pour qu'on soit autorisé de croire que le médicament a réellement agi."¹ Grisolle believes in tartar emetic, and can therefore scarcely imagine any better remedy. Pereira, speaking of mercury,² says, "Of late years, various forms of inflammation have been most successfully combated by the use of mercury." And Dr Headland also says, "Mercury is of great use in preventing the process of effusion;"³ and he looks upon this remedy as impoverishing the blood, favouring absorption, and counteracting effusion. The French physicians very seldom use calomel as an antiphlogistic, and have therefore little experience of its medical virtue. This is regretted by Professors Trousseau and Pidoux,⁴ for they say, "Il est vraiment déplorable qu'il s'éleve

¹ *Traité élémentaire et pratique du Pathologie interne*, par Grisolle, Paris, 1857, page 372.

² *Elements of Materia Medica and Therapeutics*, by Jonathan Pereira, third edition, vol. i. page 826.

³ *An Essay on the Action of Medicines in the System*, by William Headland, page 353.

⁴ *Traité de Thérapeutique et de Matière médicale*, par Trousseau et Pidoux, tome premier, page 226.

chez nous tant de préventions contre ce moyen heroique." The experience of Hamilton, Gobée, and Vogel seems never to have been tried by the French doctors. In Germany, many renowned physicians have in former days unanimously accepted calomel as the best remedy against pneumonia, especially Vogel, Sackenreuter, Schmidtman, Horn, and Richter; and it is probably on the authority of those physicians that Max Wittich has established his system of the mercurial treatment in pneumonia.¹ Dr Horn thought that he by the use of it might spare bloodletting; but Max Wittich went a step further, and abandoned it, but was nevertheless, as aforesaid, very successful.

I feel it unnecessary to enumerate all the medical men in Great Britain that have made use of calomel as well in pneumonia as other dangerous inflammations: the names of Hamilton, Armstrong, and Graves are well known by every practitioner in England, and the authority of those men is further strengthened of late by Thomas Watson, Hilario Barlow, and Dr Gay. The second of these high-standing medical men, speaking of the pulmonary condensation, says, "Our next subject should be to promote the absorption of the effused lymph which has caused the consolidation. Now, for this purpose, we cannot look for much assistance from the antimony; but, according to the principles already laid down (pp. 107-111), we may hope a great deal from the use of mercury."² The same author also remarks that, as we³ in the most cases do not see our patients who are the subjects of pneumonia until after the inflammation has proceeded to consolidation, mercury is the most appropriate remedy. This has in my practice very often happened; and it was therefore that I seldom made use of antimony alone, but in the most severe cases in combination with calomel, according to the advice of Dr Hilario Barlow and Dr Gay; and I am bound to confess that this combination had the best effect. The excellent Dr Thomas Watson (whose Lectures on the Principles and Practice of Physic are certainly one of the best clinical books in our time), speaking of the treatment of pneumonia, proceeds thus: "When, however, the inflammation has reached the second stage, that of consolidation, mercury is more worthy of confidence, in my opinion, than tartarized antimony."⁴

From the aforesaid, I hope it may be accepted that my mercurial treatment of the epidemic pneumonia was founded on reliable grounds. I used it, as I formerly have done, in two-grain doses, combined with a little opium, and such a dose was administered every second or third hour, according to the severity of the cases. In the

¹ Die Acute Pneumonie und ihre suhere Heilung mit Quecksilber-chlorin ohne Blutentziehung, von Max Wittich, Erlangen, 1850.

² A Manual of the Practice of Medicine, by Hilario Barlow, second edition, 1861, page 246.

³ Loc. cit. 245.

⁴ Thomas Watson's Lectures on the Principles and Practice of Physic, fourth edition, London, 1857, vol. ii. page 99.

most severe cases, every dose was combined with half a grain of tartarized antimony; and, as I formerly have alluded to, generally with the best success. This I generally proceeded with until the gums were slightly affected, but then I stopped at once, ordered light but nourishing diet, and ordered the patients to be well covered in their bed, and, whenever I could, had the bedroom heated by vapour of hot water; and, by thus proceeding, I have never seen any bad effect of the mercurial treatment.

There was one consequence of the use of calomel which it is worth to mention, viz., the augmentation of the chlorides in the urine after its use. This was constantly observed. Now, as the absence of the chlorides in the urine is a very bad sign in pneumonia, and their reappearance a good one, it is no improbable supposition that this reappearance may be occasioned by the calomel. Mercurials are often found in the urine; and although calomel is an insoluble compound, it may, like many insoluble remedies, be soluble in the gastric or intestinal secretions; for, as Dr Headland, in his work "On the Action of the Medicines in the System," has proved, "the great majority of medicines are capable of solution in these secretions." When the pain in the chest was extremely strong, and preventing sleep, I often made use of chloroform inhalations, and, as I supposed, with great benefit for the sick. It is well known that Professor Bishopf used it as a curative remedy in pneumonia. I do not look upon it in that way; but I think it may be used as an adjuvant in some cases. I only used it in small doses, in order to lessen the painful cough and the pain itself, without producing any complete anæsthesia.

In some light cases of pneumonia, I used the vinum colchici opiatum of Eisenmann,¹ and, as it seemed, with good success. When there was a considerable pleuritic extravasation, I sometimes used blisters, but more commonly the iodized hydroiodic ointment of Professor Delieux,² and I found this latter remedy very effective.

As there might be some circumstances which make the use of mercury less advisable in our cold climate, I found it my duty to try some other of late recommended remedies against our pneumonia. One of these remedies was acetate of lead (saccharum saturni), which, for about sixteen years since, was very much extolled by some German physicians, and, moreover, again brought into remembrance by the *Annuaire de Thérapeutique*, 1861, by Professor Bouchardat, page 241. I thought it, therefore, worth a trial, but found it of no use. One other physis, which I also tried, was the carbonate and bicarbonate of potass. This remedy was formerly tried in an epidemic pneumonia, with the best effect, by

¹ The vinum colchici opiatum of Dr Eisenmann is for many years known in Germany as a remedy against bronchitis and pneumonia (see Canstatt's Jahresbericht from 1850), and I have found it somewhat curious to see it now in some French medical journals spoken of as a quite new invention.

² *Annuaire de Thérapeutique pour 1862*, par Prof. Bouchardat, page 117.

Morgagne and Dembach, and Dr Eisenmann¹ has of late spoken favourably of its curative virtue in pneumonia. From the few trials I made with this remedy, I am inclined to a favourable idea of its effect, and think that it, administered in due time, and in sufficient doses, may be productive of a great deal of good. The oil of turpentine, which of late has been much praised by some Scandinavian physicians, is also often a valuable remedy in the latter stages of asthenic pneumonia. The poultices recommended by Dr Thomas Chambers² are certainly, I think, worthy of trial. I have as yet never used them; but somewhat like poultices have, according to my experience, often been of much benefit both in pneumonia and pleurisy. Dr Brandes, the physician to the late queen of Denmark, used cold fomentations with great success in an epidemic pneumonia in Holsatia,³ and the water-doctors use them in all inflammations. Their fomentations are, by the water-doctors, applied cold in all severe inflammations; but they very soon become warm, and their effect is then equal to that of warm poultices. In pleurisy I generally use warm fomentations of pure water, in which a good deal of carbonate of potass is dissolved, and I have always found them very serviceable.

Before concluding these my remarks, I cannot help thinking that my treatment of pneumonia will be found in a very bad accordance with the proceedings of the most renowned physicians in our time, especially those of Professor Dietl and Professor Hughes Bennett. The latter, speaking of pneumonia, says, "As to mercurials, the confident belief in their power of causing absorption of lymph, by operating on the blood, is not only opposed to sound theories, as formerly explained, but, like bloodletting, is not supported by that experience which has been so confidently appealed to in their favour."⁴ He then adduces some experience of their failure in iritis; but, as I seldom have treated that disease, and never used mercury against it, I shall only make some remarks on its absorbent action. That mercury acts on the absorbent system can certainly not be denied; but then we may fairly ask, Why should it not then be able to assist the absorption of the effused lymph? Professor H. Bennett says that the inflammation, according to his view, is "an exudation of the normal liquor sanguinis." But how does he know that this liquor is normal? I think it is not quite normal; and chemical reagents will in time to come better elucidate this point. I found the serum sanguinis, in our epidemic, extremely rich in chlorides, but they were, as aforesaid, not excreted by the kidneys; the pathological chemistry will most likely in time to come be more able to explain such abnormalities than the minutest

¹ Dr Carl Canstatt's *Specielle Pathologie et Therapie*, dritte band, page 693.

² *The Renewal of Life: Clinical Lectures* by Dr Thomas Chambers, London, 1863, page 163.

³ Brandes, *Ueber die Kälte in Krankheiten*.

⁴ *Clinical Lectures*, page 296.

pathological morphology can do. The "*Traité de Chémie Anatomique et Physiologique Normale et Pathologique*," par Prof. Charles Robin et Dr F. Verdeil, is a good beginning in this respect; and their motto, "*Chemia egregia ancilla medicinæ, non alia pejor domina*," cannot too strongly be impregnated in the mind of medical practitioners. It is our own fault if we from that excellent science are not borrowing the most valuable practical hints.

We have long ago known that liquor sanguinis is exuded in pneumonia, for Dr Boerhaave says, "*Ubi autem fines ipsi arteriæ pulmonalis inflammati, stagnat cruor, extenditur vas; expremitur transudatione quasi pars liquidissima.*"¹ I say we have long ago known this; but what we still want to know is, the real cause of this exudation, and how that cause may be best counteracted. Professor H. Bennett informs us of the ultimate cause of inflammation, which, he says, "is an irritation of the texture of the ultimate molecules of the part, in consequence of which their vital power of selection is destroyed, and that of their attraction increased;" but, then, it may be asked, Why should not mercury be able to counteract that increased power of molecular attraction, or, perhaps, to destroy the primitive cause of irritation? This is, of course, a supposition, but we ought to bear in mind that our knowledge of inflammation is built upon supposition. When the learned professor, moreover, tells us that the exuded liquor sanguinis is by the efforts of nature converted from solid state into a fluid (pus), whereby it can be partly evacuated from the bronchi, but principally resorbed into the blood and excreted from the economy (loc. cit. page 284), we learn that it is the so-called "*vis medicatrix naturæ*," on which he, like Professor Dietl, relies in this dangerous disease. But we may fairly ask, Shall nature thus proceeding not have a hard work to do, when the whole lung, right or left, or perhaps both, are consolidated? Will the body always, or in the majority of cases, bear that struggle? In my native country, has not half the part of the affected by this epidemic died during this frightful conflict? The great majority of experienced practitioners will also probably look upon a diffuse suppuration of the lungs as a very serious matter; and it is also somewhat doubtful to determine whether the absorbent system has an easier task in absorbing pus-corpuscles than effused lymph itself. We have all seen severe contusions resolved or absorbed before pus-cells have been formed; and this ought to convince us of that long-ago-known fact, that inflammation may be cured without suppuration.

In short, it seems to me that Professor Hughes Bennett has no right to speak of the use of mercury in inflammation as "opposed to sound theory;" for whatever speculations we might accept as coming nearest to the truth, whether his theory of the primitive cause of inflammation, or the older theory, viz., the surplus amount of fibrin and blood-corpuscles, or the surplus presence of the chlorides

¹ Gerhardi van Swieten, *Commentarii*, in Boerhaave's *Aphorismos*, page 826.

in the lungs, not being excreted by the kidneys, we may look upon the use of mercury as a remedy, being capable of counteracting those disorders. The arguments for such a view could at least be made as strong as all our theories on inflammation now-a-days.

From the *British Medical Journal* of 23d August 1862, I learn that Professor Hughes Bennett has, during the last fourteen years, treated 105 cases of pneumonia, and has only had three deaths. I had not that success; for although I formerly, in my whole, about twenty years' lasting practice, have had a great many cases of this disease, without, up to this year, having lost a single patient by pleuritis or uncomplicated pneumonia, I have now lost about every tenth registrated patient. To tell the truth, many of these patients were first seen when already *in extremis*, and others were old, or affected with delirium tremens; but I look, nevertheless, on the malignity of our epidemic as the most effectual cause of this mortality.

Although I know quite well that many pneumonias may be very benignant, are not at all dangerous for life, and will do well without any treatment, I shall hereafter not take on me to tell how malignant an epidemic pneumonia has been, or may be, for I am now, by experience, taught that it may be many times more malignant and dangerous than I before had imagined. I have, therefore, got great confidence in the afore-named writings of Professor Alison and Professor Christison, and I am strongly impressed by their observations and arguments. My confidence in the saving power of the so-named "*vis medicatrix naturæ*" has, on the contrary, during the last ten years in this country, lost much of its imaginary spell. I think that, if we look closely into the matter, we shall be obliged to confess that nature is as apt to kill as to save. Much might be said about this topic; but I think it must be clear enough for every one who looks more deep into the biochemical and physical processes going on in all living bodies, that it will be very difficult to demonstrate the real existence of any true "*vis medicatrix naturæ*" inherent in the system; and it can scarcely be denied that the well-known reproductive force of living bodies, does hardly merit those attributes which medical philosophers have conferred on their so high-estimated healing acts of nature. My humble opinion is, that only the highest of all created forces on earth, the human mind,¹ is from the Almighty endowed with the noble power to save: let us cultivate that power, and we shall, according to the design of a merciful Creator, often be able to counteract the imminent but immature destruction of individuals by dangerous diseases.

REIKJAVIK, 1st December 1863.

¹ On earth there is nothing great but man; in man there is nothing great but mind.—*Sir William Hamilton's Lectures on Metaphysics and Logic.*

ARTICLE II.—*Report of Clinical Cases treated in the Surgical Wards of the Royal Infirmary, under the Care of Mr SPENCE, during the Session 1862-63.* By ARTHUR G. REID, M.D., late Resident Surgeon.

(Concluded from page 892.)

TUMOURS.

Tumours of the Breast.

1. M. A., æt. 39, admitted 2d March. Scirrhus of the mamma, of four years' duration. Growth rapid within the last year. No glandular affection. Excision. Dismissed 17th April, cured.

2. J. M'C., æt. 50. Scirrhus of the mamma, of two years' duration. No glandular enlargement. Excision. Cured.

3. A. M., æt. 42. Scirrhus of the mamma, of five months' duration. About the size of a small apple. No glandular enlargement. Excision. This patient was exceedingly stout; the fat in the wound sloughed and was destroyed with potassa fusa. Rigors set in on the eighth day, followed by pneumonia, inflammation of the left hip and wrist-joints, together with jaundice, and the other signs of pyæmia. Death.

4. J. B., æt. 40. Scirrhus of the mamma, of five years' duration. Enlarged glands in the axilla and subclavian triangle. No operation.

5. S. C., æt. 46, admitted 27th August. Scirrhus of the mamma, of one year's duration. No glandular enlargement. Excision. Cured 7th October.

Tumours of the Face and Neck.

Mrs J., æt. 34, admitted 11th November 1862, with an enormous tumour occupying the right side of the face and neck. The growth had been of sixteen years' duration, and commenced as a small "kernel" under the lobule of the right ear. At intervals its size had rapidly increased, especially within the last two years. On admission its circumference was bounded as follows:—Commencing about an inch from the spine of the second cervical vertebra, it extended downwards to within an inch and a half of the clavicle; thence it swept obliquely upwards to the cricoid cartilage, the angle of the mouth, and outwards to the external angle of the orbit. From this point it passed, first downwards, then horizontally backwards, stretching the lobule of the ear, till it reached the spinal column. The surface of the tumour was irregular and nodulated; the skin tense, especially over the upper portion; the superficial veins, however, were not much distended. The cervical portion was firm to the touch, but the more prominent facial division was soft and semi-fluctuating. The tumour was in direct contact with the deep vessels and nerves lying beneath the sterno-mastoid muscle, whose

course was marked by an oblique firm depression. There was no enlargement of the glands, and the general health of the patient was good, though she was somewhat pale. In order to expose the tumour, four incisions were requisite. Two were carried in an elliptical manner, from the lobule of the ear to the origin of the sterno-mastoid; a third, from the centre of the posterior of these curved incisions, backwards and slightly downwards, to the outer margin of the growth; and a fourth, from near the angle of the mouth, downwards and outwards, to the centre of the anterior curved incision.

During the course of the operation, various nerves and vessels were laid bare. The common carotid and jugular vein were distinctly visible throughout nearly their whole extent, and the phrenic nerve was exposed where it lies on the scalenus anticus. The external carotid was felt pulsating in the upper part of the wound, while the cervico-facial division of the seventh nerve, which was seen crossing the tumour, had to be cut through. The loss of blood did not exceed eight ounces; it was chiefly venous, issuing from the large veins passing out of the tumour. The recovery of the patient was necessarily slow; but, at the end of two months, she was discharged, cured. Recent intimations state that she enjoys the best of health; that the paralysis induced in the right side of the face is improving; and the cicatrices are becoming less marked.

The tumour was fibro-cartilaginous, and weighed rather more than seven pounds.¹

W. F., æt. 13, admitted 24th April. Six weeks previous to admission a companion had repeatedly struck him on the nose with a stone. Next day the part was considerably swollen; and, as the tumefaction continued to increase, he was sent to a doctor on the third day. Poultrices were ordered to be applied for some time, and afterwards an incision was made, but no matter escaped. He was recommended to consult Mr Spence, and came to the hospital two weeks after receipt of the injury. The opening was enlarged, and the wound bled very freely, but still there was no trace of pus. His parents insisted on taking him home, and did not return with him for a month afterwards. Meanwhile the tumour had rapidly increased to the size of a small apple. It was soft and fluctuating to the touch, and was situated between the nasal bones, pressing them asunder. After admission it steadily enlarged, fungated, and was attended with slight hæmorrhages, which were easily checked, however, by cold or the perchloride of iron. Its lateral pressure led to sloughing of the superjacent skin, and through the opening on each side there projected a fungating mass. The expansion of the growth was likewise accompanied by displacement of the eye-balls and œdema of the lids. The conjunctiva of the right eye became congested; the cornea dull and opaque; the whole contents

¹ A full report of this unique case will be found in the Dublin Quarterly Journal of Medical Science for November 1863.

atrophied, and eventually the loss of sight was complete. At a later date the left eye was similarly affected, and by the middle of July the boy was totally blind. The pain during the first two months was trifling; but afterwards its sharp, violent, and lancinating character greatly disturbed his rest, and hastened on the fatal termination. He was sensible up to three days before his death, which took place 24th July.

Post-mortem Examination.—A large, prominent, fungating tumour, about the size of a cocoa-nut, was found occupying the whole nasal region, projecting over the cheeks and forehead, and almost completely filling both orbits. It extended into the posterior nares; the ethmoid bone had been completely absorbed; and in the situation of the cribriform plate, a portion about the size of a walnut pressed directly on the brain. The structure was medullary.

D. B., æt. 22; very diminutive for his years; pale, emaciated, and with a small pulse. He first presented himself at the hospital three years ago, when he was supposed to suffer from a malignant tumour of the upper jaw. At that time there was great fulness of the right cheek, the eye was pushed forwards and upwards, the palate greatly depressed, and through the right nostril a red, bleeding, fungating, polypoid mass projected. During the interval, he had been repeatedly under observation, and the slight differences in the tumour were carefully noted. On admission the teeth were observed to be perfectly regular; there were no head symptoms; nor was there any eversion of the eyeball. Taking these physical appearances into account, and also the fact that the growth of the tumour had been slow, Mr Spence concluded that it was simple, and that it had originated behind the superior maxilla. Since many of these pharyngeal polypi have a narrow base, although their pedunculated masses are often large and long, it was thought that by excising the upper jaw, the growth could be exposed and removed. The dangers of the operation were laid before the patient and his friends, he nevertheless eagerly embraced the only chance of getting quit of a disease which rendered life useless and a burden. The incision was made according to Dieffenbach's method; but, in order to obtain a ready access to the growth, it was extended along the zygomatic arch, in a line with the fissura palpebrarum. The flap, thus made, was reflected outwards; the bleeding vessels ligatured, and the jaw-bone detached and removed in the usual manner. Before removing the maxilla, it was necessary to separate a large pedunculated mass of the growth, which passed through the pterygo-maxillary fissure, round the outer border of the jaw, and which, lying upon its anterior surface, caused the tumefied appearance of the cheek. A second mass passed through the sphenomaxillary fissure, and projected the eyeball forwards and upwards; while a third, situated chiefly in the pharynx, depressed the soft palate, and likewise protruded through the anterior nares. The base was very broad, extending over the lower

surface of the body of the sphenoid bone, the internal pterygoid plate, and the anterior portion of the basilar process of the occiput. It being impossible to remove the whole morbid structure, the large polypoid masses were first taken away, and then, with a pair of scissors, the remainder was cut close to the bone. The bleeding was trifling, no vessel requiring a ligature. The patient fainted before the completion of the operation; his face became blanched, his pulse weak, and breathing feeble. To relieve these symptoms a brandy enema was administered before carrying him to bed. After this, prolonged attempts were made to revive him, by the use of galvanism and stimulants, but he never rallied from the state of syncope.

B. C., æt. 50, was admitted in a state of great exhaustion. For eight years she had suffered from a malignant tumour, which commenced in the soft tissues of the cheek. At first its growth was slow; but at the end of two years it burst, fungated, increased rapidly, and was attended with intense lancinating pain, repeated hæmorrhages, and a very fetid discharge. The base of the tumour extended over the greater part of the superior maxilla, the ascending ramus of the jaw, and the lower temporal region. No operation. Died of exhaustion a fortnight after admission.

Mary C., æt. 65. Malignant tumour of the lower jaw, which commenced about six months previous to admission, opposite the first molar tooth, and was accompanied with sharp shooting pains. At the date of admission the tumour was about the size of the closed fist, and extended transversely from the left angle of the jaw to the mesial line of the chin. It felt firm to the touch, and the skin over the lower part of the growth was of a dark red colour, and would soon have given way. There were no enlarged glands in the neck. The usual incision was made for removal of the left half of the inferior maxilla. The bone was divided a little beyond the middle line, and then disarticulated. Died of pyæmia, eight days after the operation.

C. M., æt. 23, a healthy woman, had been for six years affected with a tumour, which commenced a little below the right ear. From this point it gradually extended backwards to the middle line, forwards to the angle of the jaw and the anterior border of the sterno-mastoid, and downwards to the level of the cricoid cartilage. The anterior portion was of a cystic character; it was very prominent, situated over the sterno-mastoid, and had a pulsatory feeling, which diminished when pressure was made on the common carotid. A bruit, varying in distinctness, was audible through the stethoscope, placed over the lower part of the tumour. The posterior division was flatter, non-fluctuating, more distinctly pulsating, and with a louder bruit. By pressure on it, the contents could be partially emptied into the general vascular system. During the three months that the patient was under close observation there was no increase in the dimensions of the growth; no pain or any interference with her general health; the skin covering it was lax

and natural in colour. She left hospital, promising to return whenever the symptoms became worse.

J. B., æt. 45. Large cystic bronchocele, formed of two distinct cysts, which were both tapped. The one contained a clear serous fluid; the contents of the other resembled those of a hemocele. The former was injected with tincture of iodine, and when the acute inflammatory symptoms had diminished, a blister was applied, and the iodide of potassium given internally. After the swelling was considerably diminished, he returned home, and since then the cure has gone on favourably.

E. B. Fibrous tumour, about the size of a walnut, situated over the left side of the hard palate. Excision. Cured.

W. R., æt. 41. Fibrous tumour, about the size of a hen's egg; situated in the digastric fossa. Removed by a transverse incision. Cured.

Trunk and Extremities.

J. S. Fatty tumour, as large as a foot-ball, of twenty years' growth, situated over the right scapula. The skin was adherent over part of the mass. The arm was atrophied, and there was partial loss of power. Removed by an elliptical incision. Cured.

B. R. Lobulated fatty tumour, about the size of an orange, situated over the scapula. It was found to be pretty firmly attached to the subjugated textures. Cured.

J. G. Solid bursal tumour over the peroneus tertius, about the size of a small apple. Excision. Cured.

J. C. Immediately above the internal condyle there was a pedunculated exostosis, which greatly impeded walking, and which he was anxious to get rid of. A longitudinal incision was made over the growth, and a short transverse one through the muscles and fascia, so as to allow the pedicle to be completely exposed and cut through with the bone pliers. A few days after the operation, acute inflammation of the cellular tissue of the thigh set in, and went on to suppuration. The discharge escaped through the wound, and a counter opening made about the middle of the thigh. Cured.

J. A., admitted with a tumour over the inner surface of the lower third of the thigh, which, on microscopic examination, was found to consist of osteoid and medullary cancer (see *Amputations of the Thigh*).

Erectile Tumours.

H. G., æt. 23. At birth there was a red mark over the chin, but it never caused inconvenience until two years ago, when it began to grow rapidly, and assume the tumour form. By the date of admission it had attained the size of a hen's egg. It was repeatedly injected with the perchloride of iron, and, in consequence of this, a large slough formed, the base of which was transfixed with needles, and surrounded by a ligature. Thereafter the slough

separated. The remainder was touched at times with potassa fusa, and occasionally injected with the perchloride, until the whole had become perfectly solid. The wound cicatrized, and the bulk of the tumour has gradually diminished under the local use of the tincture of iodine.

E. M'C., æt. 64. For fifty-one years patient had had a growth on the outer surface of the right foot, but it had remained almost stationary until three weeks before admission, when it began to grow rapidly, and, from her persisting in attempts to wear a shoe, ulcerated on the surface. The tumour was ovoidal in shape; its long diameter two and a quarter, and its transverse one and three-quarter inches; it was of a soft consistency, and the skin covering it was of a normal colour. The tumour was removed by transverse incisions. There was pretty free hæmorrhage, but all the vessels were easily secured. On carefully examining the growth it was found to consist of a collection of bloodvessels. The wound healed favourably and rapidly.

In addition to these, there were many examples of small nævi, treated successfully by the injection of the perchloride of iron and the subsequent application of tincture of iodine.

Epithelial Growths.

1. M. D., æt. 50. Affected with epithelial cancer of the mucous membrane lining the interior of the cheek. The disease was attended with severe lancinating pain. No glandular enlargement. As it was possible to remove the whole of the morbid structure, a somewhat curved incision was carried from a little external to the angle of the mouth, upwards to the anterior border of the ramus of the jaw. The healthy textures were then dissected from off the surface of the growth, and its deep connexions with the mucous membrane covering the alveolar margin of the lower jaw, divided. The wound healed very rapidly. Cured.

2. D. H. Epithelioma of lower lip. No glandular enlargement. Removed by V-shaped incision. Cured.

3. W. L. Epithelioma affecting the prolábium of lower lip. Removed by scissors. Cured.

4. G. T. Epithelioma affecting a large central portion of the lower lip. V incisions. Cured.

5. W. D. Cancerous ulceration of the side of the tongue and soft palate. Enlarged glands in the neck. No operation.

6. P. D. Large epithelial ulcer of the side of the neck, exposing the muscles. Glands enlarged. Patient very much reduced. Dismissed *in statu quo*.

Testicle.

D. W., æt. 34. Medullary tumour of the right testicle, which, within ten months, had attained the size of a goose's egg. There was no glandular enlargement in the groin. Excised. Cured.

S. H., æt. 31, was kicked on the testicle seven months ago, and within a few weeks observed it swollen. The tumour steadily increased, and had reached the size of a large hen's egg at the date of admission. It was in general firm in consistence, but at various points there was a feeling of semi-fluctuation; it was the seat of intense lancinating pain. No enlarged glands in the groin. Excision. Cured. The tumour was medullary-cystic.

E. C., a groom, had a chancre three years ago, and was mercurialized. A year previous to admission the testicles began to swell, and the skin over the left one sloughed. The testicle projected through the opening, and fungated. For some time lotions were applied, and iodide of potassium given internally, but without any beneficial effect. The skin around the tumour was therefore pared and the edges stitched together by silver suture. The wound healed readily. Cured.

M. P., æt. 28 years. Labouring under tertiary syphilis. The right testicle was removed in New Orleans about a year before admission, under the supposition that its enlargement was due to malignant disease. Within the previous five months the left testicle enlarged to three times its normal size, and became the seat of lancinating pain. No. 10 bougie passed easily into the bladder. The treatment consisted at first of fomentations of acetate of lead and opium, and afterwards simple and mercurial strapping. A full-sized bougie was occasionally passed. Internally, iodide of potassium, and subsequently quinine. Cured.

Remarks.—Surgical authorities differ as to the propriety of interfering with large tumours situated beneath the sterno-mastoid; and in the few cases in which it has been attempted by British surgeons, it has been found impossible to complete the operation on account of the firm subjacent connexions. This important question, of the presence of adhesions, cannot be predetermined by any process of manipulation, because the bulk of the growth stretches the textures, and the laxity of the bloodvessels, etc., allows them to move readily along with the tumour. But from a consideration of the physiological symptoms it may be decided that the underlying nerves are not implicated where the processes of respiration and deglutition remain unaffected, and that neither the internal jugular nor carotid are materially involved so long as the arterial and venous supply of the face and neck continues unchanged. Although all these evidences were in favour of surgical interference in the case of Mrs J., the probability of complete removal, and of future immunity from a return of the disease, depended essentially on the nature of the growth. If the tumour was simple, there was a possibility of breaking up any adhesions which might have occurred between its surface and the bloodvessels; but if it was malignant, the contiguous parts would be so intimately incorporated with the diseased mass as to destroy every chance of a successful result. The diagnosis of

the non-malignancy of this enormous tumour rested on the account of its origin sixteen years previously, on the distinct definition of its circumference, and on the absence both of cachexia and glandular enlargement. Latterly, the bulk had rapidly increased, and this might have been attributed to degeneration; but it could be explained more satisfactorily by the progressive enlargement of the bloodvessels, the greater activity of the nutritive changes, and the consequent increase from its own inherent power of growth. The dangers, to be apprehended from an operation, were hæmorrhage from the arteries supplying the tumour, or from the great veins returning the blood, the entrance of air into any of the large veins that would require to be divided, injury of the phrenic or vagus nerves, and exhaustion of the patient from a prolonged operation, and exposure of a large extent of surface. These dangers were so far guarded against by tying the arteries whenever they jetted, and likewise many of the large veins before division, and by keeping the edge of the knife directed towards the deep surface of the tumour; while the fingers of the assistant followed the track of the dissection and protected the vessels as they were exposed.

The case of W. F. is, in the first place, important medico-legally, inasmuch as the tumour apparently resulted from a blow. It followed the injury so closely that it might have been regarded as an instance of cause and effect, and a question might have arisen as to damages or punishment. Doubtless, there are cases where no other explanation can as yet be brought forward to account for the occurrence of a malignant tumour in a perfectly healthy person with an unexceptionable family history. But several of the relatives of this patient had died from malignant disorders, and the tumour, instead of arising at the seat of injury, came from a deeper source (the ethmoid cells), where it must have existed prior to the infliction of the blow, which, along with the incisions, merely stimulated it to a more rapid growth, and by removing all tension, allowed it to fungate. When the patient first came to hospital the swelling presented the usual appearances of inflammation; it was red, hot, tense, painful, and fluctuating. Regarding it as an instance of unhealthy suppuration occurring in connexion with effused blood, the small incision which was formerly made in it was enlarged, so as to evacuate the matter; but no pus escaped, and the bleeding which followed was very free. He went home and applied poultices and hot fomentations to the swelling. On his return, after a few weeks, the true nature of the growth was evident from its rapid increase in size, widely separating the nasal bones, and encroaching on the cavity of the right orbit, and along with this there were the usual constitutional signs of the malignant cachexia. The tumour being now viewed as encephaloid, the next question to be decided was how to treat it. Removal by the knife was impossible, both from the situation and the want of circumscription, and the application of escharotics was full of danger, seeing that previous to forcing

asunder the nasal bones, it must have led to absorption of the thin plate of the ethmoid, and been lying in direct contact with the brain. Treatment was therefore restricted to palliatives.

At first it was impossible to form a diagnosis of the case of D. B., because it presented all the appearances of a malignant growth, commencing, like the former, in the ethmoid cells, but, instead of pressing directly forwards, it passed downwards into the cavity of the nose, pushed forwards the upper jaw and eyeball, and projected through the anterior and posterior nares. During several years the boy was at different periods an inmate of the hospital, and was seen by many surgeons who all coincided with this opinion. From observing, however, the slow growth of the tumour, over an extended period, and the absence of advancing cachexia, Mr Spence, in the first place, concluded that it was non-malignant in structure, and taking into account the regular arrangement and sound state of the teeth, and also the direct displacement of the eyeball forwards, considered, in the second place, that it was a large naso-pharyngeal polypus, composed of three or four pedunculated masses passing in different directions. Although the base of this form of growth is usually broad, it is definite in its situation. The primary attachment is generally limited to the inferior surface of the basilar process and body of the sphenoid, and to the internal pterygoid plates; the secondary adhesions which may occur in this, as in other forms of tumour, are almost always weak and easily broken up. Viewing the case in this light, the prognosis was still very unfavourable, as the morbid results of this form of growth had already become very urgent, the repeated hæmorrhages having rendered the patient weak and anæmic; while the great depression of the palate so impeded respiration and deglutition, that any further addition to the growth, in this direction, would have necessitated operative measures. Under these circumstances it was absolutely necessary to try some method of relief; and as the patient was urgent in his requests, and anxious to submit even after the very hazardous nature of the undertaking was laid clearly before him, Mr Spence resolved to attempt the removal of the whole growth. Where the tumour is small, partial removal of the jaw or palate may afford access to the base, but where, as in D. B., the pedunculated masses have passed through the fissures, and afterwards increased greatly in size on the different surfaces of the superior maxillary, they can only be dislodged from these situations by resection of the jaw. The latter operation has been successfully performed in similar cases, and has been followed by satisfactory results. Accordingly, in D. B., a like mode of treatment was adopted. The upper jaw was removed, and the pedunculated masses swept away; the hæmorrhage which ensued was trifling, only three vessels requiring ligature. After this the breathing of the patient became more free; but, while the base was being carefully clipped with scissors, syncope supervened. From this state he was partially

rallied by brandy enemata. After the completion of the operation he was conveyed to bed, and attempts made to revive him by the employment of stimulants, galvanism, warmth, etc. The symptoms of shock however deepened, and he sank from the immediate effects of the operation. On post-mortem examination the root of the growth was found to be extensive, and so firmly adherent to the base of the cranium that it would have been impossible to have separated it by avulsion without tearing away the thin layer of bone which separated it from the brain. The only safe method of removal was by cutting it close with scissors, which, however, prolonged the operation.

There were three examples of large vascular tumours. Two of them admitted of treatment, but as the third was neither increasing in size, nor affecting the general health, it was not deemed proper to subject the patient to a dangerous operation. In C. M'P., the tumour was prominent and defined, the skin covering it uninvolved, and the situation over the tarsus, against which firm pressure could be made, if necessary. In such a case, excision is the most speedy and effectual cure, and the danger from hæmorrhage is trifling, when the knife is kept clear of the circumference, so as not to wound any of the dilated and tortuous vessels composing the tumour. As the whole of the lower lip was involved in H. G., the treatment was directed towards effecting destruction or consolidation of the morbid texture, by repeatedly injecting large quantities of the saturated solution of the perchloride of iron in glycerine. After this the central portion sloughed, and in order to hasten its separation the base of the slough was transfixed with harelip needles, and tightly constricted with a ligature. The remainder of the tumour was either destroyed by potassa fusa, or consolidated by reinjecting the perchloride, until the whole had become firm. When this was satisfactorily effected, cicatrization of the wound was encouraged. On dismissal, the great deformity had almost disappeared, leaving in the centre of the lip a linear cicatrix; and although there was still a certain amount of swelling, it was perfectly solid. Since then curative changes have advanced under the local use of iodine, and the cicatrix has now almost entirely shrivelled and disappeared.

WOUNDS.

1. C. C., æt. 5, admitted 4th December. Was kicked by a horse on the inner side of the left thigh in the lower third. Wound bled so profusely that she fainted, after which the bleeding ceased. When conveyed to hospital, Mr Spence, on examination, found the wound small and transverse in direction. On introducing his finger he discovered that the femoral artery had been completely torn across, and that the lower division was retracted into the popliteal space, while at the same time the upper portion was felt beating higher up in the wound. A large vein was also divided, the contiguous muscles were lacerated and bruised, and the bone

laid bare. Leg cold; no pulsation in tibials. Mr Spence immediately enlarged the wound, and, tracing the course of the artery, tied both ends, the one in the popliteal space, the other in Hunter's canal. The limb was wrapped in wadding, and laid on a soft pillow; the wound dressed with tepid water, and afterwards with lotions. Ligature separated on the twelfth day. No hæmorrhage. Dismissed cured.

2. M. P., æt. 17, admitted 21st May. Two weeks previous to admission this patient received a wound from a piece of broken glass, in front of the right elbow-joint. The bleeding, which was very profuse, was arrested by cold and direct pressure. It recurred, however, twice the same week, and also on the day of admission. When brought to the hospital she was very anæmic, and had a small feeble pulse. Mr Spence, on enlarging the wound, perceived a small puncture in the brachial artery, just above the point of bifurcation, from which blood issued when the tourniquet was relaxed. A double ligature was placed on the vessel which separated on the fourteenth day. The patient made an excellent recovery.

3. Mrs F. was admitted, 22d April, with an incised wound over the course of the right ulnar artery, a little above the wrist-joint. The hæmorrhage, which was profuse at the time, had ceased. On separating the lips of the wound, however, and sponging it out thoroughly, the blood jetted through a small opening which had been made in the vessel. A double ligature was applied, and the limb laid in a Gouche's splint. Dismissed cured.

4. D. S., while at work in a quarry, was struck by the sharp edge of a spade on the outside of the left wrist. The radial artery was divided in the hollow between the phalangeal extensors of the thumb. Both ends were searched for and tied. Cured.

5. M. H., a nurse in the surgical wards, had the right radial artery divided in the lower third, by a piece of a soda-water bottle, which burst while she was drawing the cork. Mr Spence, who was in the wards at the time, immediately secured the vessel above and below. Erysipelatous inflammation attacked the hand and forearm, ending in suppuration on the back of the hand. Cured.

6. J. V. received a deep punctured wound in the textures lying between the metacarpal bones of the thumb and fore-finger. The wound bled considerably at the time, and on three subsequent occasions the bleeding issued from the bottom of the wound as if the radial had been opened into. There being no hæmorrhage on admission, pads were placed on the radial and ulnar vessels at the wrist, also on the wound (which was on the palmar surface), and on the dorsum directly opposite. The pads were secured by bandaging, the limb elevated, and the elbow flexed. After this there was no recurrence of hæmorrhage. Cured.

7. W. B., æt. 45, a brewer, received a punctured wound over the inner end of the superficial palmar arch. The patient was

admitted a week after receipt of the injury on account of repeated attacks of hæmorrhage. Pads were placed over the vessels and wound as in the case of J. V. Bleeding did not recur, but acute inflammation set up afterwards along the course of the synovial sheaths of the muscles of the fore-arm, terminating in suppuration. The matter was evacuated by a deep incision a little above the wrist. Dismissed cured.

8. T. R., æt. 44, a railway porter, was knocked down by an engine and dragged along the ground by the tender for some distance. On admission, the pinna of the left ear was found completely detached, except at the lower part, where it was suspended by a narrow band of skin. This was divided, and the edge of the skin lining the external meatus stitched to the surrounding textures by a few sutures. There were no head symptoms, and the wound healed readily; the sense of hearing on that side, however, was considerably impaired.

9. R. M'D., æt. 43, admitted 9th June. Was run over by a cart and sustained a severe wound of the left leg. The wound, of an incised appearance, extended along two-thirds of the fibula, exposing the perinæi muscles. The edges of the upper part were brought into close apposition by silver sutures. Healed readily. Dismissed cured, 2d July.

10. P. S., æt. 14, admitted 3d January. While crossing the street he was knocked down and run over by an omnibus. On examination it was found that he had received two lacerated wounds on the inner surface of the upper third of the left leg, separated by a narrow band of skin. There was also a large transverse wound, of a more incised character, crossing the lower part of the thigh of the same limb. The external surface of the leg was considerably bruised, and the fibula fractured at the upper part. The transverse wound in the thigh was brought together by silver sutures, the limb laid in a leather splint, and tepid water-dressing applied. The patient was extremely scrofulous, but under constitutional and local treatment, he was finally dismissed cured, 27th March.

11. J. M'K., æt. 12, a printer's boy, was admitted 30th April. His hand and fore-arm having been caught between two cylinders revolving about two inches apart, were severely crushed; while at the same time two large lacerated wounds were inflicted, the one over the olecranon, but not communicating with the elbow-joint, the other along the outside of the arm. The treatment consisted of fomentations to the fore-arm, tepid water dressing to the wound, and small doses of tartar emetic internally. Subsequently, lotions were substituted, and tonics administered. Dismissed cured, 8th July.

12. M. C., æt. 14. Arm caught between two pinion-wheels, which inflicted two rows of narrow, transverse, lacerated wounds along the whole length of the fore-arm. A many-tailed bandage

with tepid water dressing was for some time applied, and subsequently lotions. Cured.

13. W. M., æt. 45, of a melancholic temperament, had on several occasions attempted to destroy himself. On admission, there was found an incised wound three and a half inches in length, running obliquely from the left to the right side of the neck, the centre being immediately below the pomum Adami. The superficial textures were divided, and the thyroid cartilage exposed. Two small vessels which jetted were tied, and the extremities of the wound were then brought into accurate apposition. The patient, after remaining about a month in hospital, was sent out cured.

Remarks.—Even in recent surgical works, a rule is laid down that in primary hæmorrhage no attempt should be made to tie the wounded artery unless it is bleeding. This law is certainly very applicable to small bloodvessels to which there is no direct guide, and which may be generally trusted to nature and compresses. But where the artery is of large size, such as the radial and upwards, there is no security from hæmorrhage without ligature of the vessel; and if from the position and direction of the wound it is suspected that the arterial trunk has been opened into, the incision should be enlarged in the direction of the course of the artery, and a ligature applied, if necessary. Two of the above cases illustrate this modification of the rule,—the one shows the necessity of a careful examination of the wound, and the early application of the ligature; the other indicates the risks arising from delay. In C. C., the wound looked at first sight trifling; it was situated rather low down in the thigh to lead to the suspicion that the femoral was opened into, and but for the blanched appearance of the child, and the mother's statement that there had been a great loss of blood, the real danger might have escaped observation. In order to examine the injury thoroughly, the patient was placed under chloroform. On inserting the finger into the wound, it was found to pass obliquely upwards, and on tracing the lacerated tendon of the adductor, the sartorius was felt divided, and the end of the femoral artery pulsating in Hunter's canal. In addition to this, a large accompanying vein was torn across, and the shaft of the femur was laid bare at the seat of injury. Although under these circumstances there was great liability to gangrene of the limb, it was not deemed proper to adopt severe measures in the first instance, inasmuch as the patient was young, the bruising of textures limited, and there was no great effusion of blood to compress or prevent the collateral circulation. The wound was, therefore, extended in the direction of the course of the main vessel, and one end secured in Hunter's canal; the other, which had retracted into the popliteal space, was followed and tied. The recovery of the patient was uninterrupted and complete; but if the rule stated above had been neglected, there is every probability that on the restoration of the natural force of the circulation, the clot would have been broken down, the hæmorrhage

been repeated, and the already exhausted child have succumbed under the further loss of blood. In the second case, M. P., a wound of the brachial artery, was treated in the country for two weeks with compresses and bandage, but during that time there had been repeated attacks of hæmorrhage which greatly exhausted the patient, and the wound had assumed such an unhealthy appearance that it was impossible to continue the treatment. From the position of the wound over the bend of the arm, and from the occurrence of repeated bleedings per saltum, there could be little doubt that the brachial was opened into. In order to tie the bleeding vessel, the incision was extended, and the infiltrated textures separated by the finger. The round tendon of the biceps was then felt completely divided, and the semilunar fascia entire and stretched; but as the wound passed in the direction of the artery, the fascia was divided, and the lymph over the vessel broken down. After this, when the tourniquet was relaxed, blood was seen to issue from a puncture in the side of the brachial just above the bifurcation; a double ligature was therefore applied above and below the opening. The arm was kept in a flexed position in order to promote the union of the biceps. After this, there was no recurrence of the hæmorrhage. In this patient the operation was much more difficult than in the former, on account of the infiltrated state of the tissues, and the great difficulty experienced both in separating them and in recognising the various textures. Two instances of suspected wound of the palmar arch (J. V., and W. B.), were admitted some days after receipt of the injuries. As the patients were strong men, and little affected by the hæmorrhage, there was no great risk from bleeding, so long as they were under direct observation. Compresses were therefore placed directly over the wound and over the radial and ulnar, and secured by a firmly applied bandage. This, combined with flexion and elevation of the limb, proved sufficient to prevent further hæmorrhage. If bleeding had supervened, it would probably have been impossible to apply a direct ligature to the wounded vessels, and failing this, it would have been necessary to cut down and tie the brachial.

There was admitted a curious case (T. R.) of a lacerated wound detaching the pinna of the ear. The patient recovered without suffering any head symptoms, but the hearing remains considerably impaired on the injured side.

DISEASES OF THE BONES AND JOINTS.

H. M'I., æt. 7. Necrosis of the shaft of the tibia following injury. Several pieces of bone removed. Cured.

A. C., æt. 14, admitted on two separate occasions on account of necrosis of the tibia. The new bone had to be divided before the sequestrum could be removed. Cured.

A. W., æt. 11. Acute necrosis of the tibia. Disease began ten days before admission. Profuse suppuration. Several pieces of bone removed. Cured.

A. M'D., æt. 17. Necrosis of the tibia of six years' duration. Two pieces of bone removed. Cured.

J. S., æt. 16. Necrosis of the lower end of the femur, at one time threatening to involve the knee-joint. Small exfoliation. Cured.

J. W., æt. 19. Necrosis of the ulna. Several sequestra removed. Cured.

J. R., æt. 13. Necrosis of the lower jaw. Sequestra removed. Cured.

W. C., æt. 19. Limited caries of the acromion. Diseased bone removed by the use of the gouge, followed by the application of the red oxide of mercury. Cured.

J. H., æt. 35. Caries of the lumbar vertebræ, sacrum, and ilium. Under cod-liver oil, tonics, and good diet, the general health improved. Relieved.

A. A., æt. 10. Limited caries of os calcis. Diseased bone removed by the gouge. Cured.

A. D., æt. 12. Cario-necrosis of the tarsus of both feet. Disease commenced two years ago, but his general health had only recently become affected. Refused to submit to an operation.

Ed. K., æt. 12. Cario-necrosis of the tarsus of both feet. Disease commenced a year before admission. Several pieces of bone removed from the right foot. Constitutional treatment. Lotion to the sinuses. Removed to the country, improving.

Wm. B., æt. 6. Limited caries of os calcis, supervening on injury. Diseased portion removed by the gouge. Cured.

Ann L. Ulceration of the cartilages of the ankle-joint. Caustery. Cured.

Thomas C., æt. 8. Gelatinous disease of the ankle-joint, going on to suppuration. Operation refused.

J. B., æt. 25. Acute synovitis of the knee-joint, with ulceration of the cartilages. The treatment consisted first of leeches, followed by hot fomentations, and the use of the wire splint, and subsequently of blisters, strapping, iodine, and the caustery. Cured.

R. M'G., æt. 18. Strumous disease of the head of the tibia, accompanied with chronic inflammation of the knee-joint. Blisters; strapping; use of the wire splint; caustery. Cured.

C. O'N., æt. 40. Ulceration of the cartilages of the knee-joint. Corrigan's caustery; rest. Cured.

M. H., æt. 26. Ankylosis of the knee-joint in a semiflexed position, accompanied with syphilitic periostitis of the lower end of the femur. Rest; fomentations; iod. potassii. Relieved.

J. B., æt. 24. Knee ankylosed in the flexed position. Refused to submit to operative treatment.

M. M'G., æt. 20. Scrofulous disease of the knee-joint. Abscess over inner condyle. Cavities in the apices of both lungs. No surgical interference. Dismissed *in statu quo*.

R. D., æt. 31. Ulceration of the cartilages of the knee-joint. Rest; actual caustery. Dismissed with the limb in a starched bandage, much improved, and firmly ankylosed.

C. O'D., æt. 9. Gelatinous degeneration of the knee, of three months' duration. Use of wire splint; strapping; bandaging; compound syrup of the phosphates. Cured.

T. B., æt. 20. Chronic synovitis of the knee, which commenced two years before admission. Blisters; strapping; use of wire splint; bandaging; iodide of potassium. Greatly relieved.

R. N., æt. 25, had been treated for acute rheumatic affection of the knee-joint. On admission, a large abscess was found extending along the lower third of the thigh; the patient was very prostrate. The matter was evacuated, and through the opening the finger could be passed into the joint. After this the disorganization of the joint went on rapidly, and the patient sank under the irritative fever.

E. M., æt. 45. Chronic rheumatic arthritis of the hip-joint. Actual cautery applied. Cured.

M. O'D., æt. 4½. Gelatinous degeneration of the knee-joint, of one year's duration. Knee very much flexed. Treatment consisted in the use of the wire splint to straighten the limb, and subsequently strapping with ordinary plaster. Cured.

A. M., æt. 18. Gelatinous degeneration of the knee, of nine months' duration. Under the use of the wire splint, strapping, and iodine, a marked improvement occurred.

J. M'K., æt. 20. Gelatinous degeneration of the synovial membrane, and ulceration of the cartilages of the knee-joint, of six years' duration. A prolonged treatment had no effect in arresting the disease; excision of the joint was proposed, but the patient declined to submit.

J. T., æt. 27. Disease of the shoulder-joint, of five years' duration. Actual cautery. Relieved.

J. C. Necrosis of the shaft of the tibia. Various portions of bone removed. Cured.

J. G., æt. 36. Necrosis of the femur, of fifteen years' duration. Large sequestrum removed. Cured.

E. T., æt. 24, received a punctured wound of the wrist, five weeks previous to admission. The joint inflamed, suppurated, and sinuses formed, through which bare bone could be felt. Treatment consisted in the application of a splint, and the use of poultices and fomentations. Patient, after remaining about a month in hospital, went to the country *in statu quo*.

J. M'D., received a punctured wound of the wrist-joint, from a shoemaker's awl. Acute inflammation of the joint and along the sheath of the tendons, with high irritative fever supervened. The wound was freely enlarged, and several counter-openings made. Recovered, with diminished movement in the joint.

W. T., æt. 50. Thecal bursitis, of several years' standing, and resisting ordinary treatment. Free incision a little above the annular ligament, with subcutaneous division of the latter structure. Cured.

J. W., æt. 30. Thecal bursitis, which had been repeatedly alleviated, but always returned, and now resisted palliative treatment. Treated as above. Cured.

Remarks.—Although five cases of gelatinous degeneration are reported as cured, it can scarcely be expected that the relief will be permanent in most of them, seeing that these patients were all in poor circumstances, and placed in very unfavourable conditions as regards both diet and hygiene. This, combined with their inability to maintain prolonged rest of the limb, almost ensures a recurrence of the disease, although they may have left the hospital apparently cured. Accordingly, most of the cases, in which operative interference was required, had been under observation for many years, and inmates of the hospital on several occasions, until at length the disease had advanced to its last stage, and necessitated either excision or amputation. This is why there are so many operations for the relief of the ultimate effects of this disease in the hospital practice of surgeons, compared with what is found in private life, and hence also the necessity for taking into consideration the patient's condition in life, in giving the prognosis.

The cases of ulceration of cartilage where the disease commenced either in that texture itself, or in the superficial layer of bone, were treated in a most successful and satisfactory manner by repeated applications of the actual cautery; and in one patient, R. D., the disease which had been going on for years was arrested, and firm ankylosis produced. Rapid improvement almost invariably follows the use of the cautery when it is employed early, and in proper cases; whereas it is generally ineffectual when the ulceration is accompanied with the suppuration of either advanced gelatinous degeneration of the synovial membrane, or of strumous caries of the head of the bones. Those patients who are affected with simple ulceration of the cartilages, are generally adults of a rheumatic diathesis, and the most common sites are the knee, hip, or shoulder joints.

E. M. afforded a good example of chronic rheumatic arthritis attacking its favourite joint—the hip. As in general, it commenced in this case, in a patient about middle life, with the ordinary local characters of rheumatism,—namely, a degree of pain and stiffness in the joint, increased at night, and during the prevalence of damp or cold weather. These symptoms had gradually become more marked, until at length the pain was unbearable when the joint was moved, and the patient, unable to sit upright, was compelled to remain in bed so as to maintain the extremity nearly in a direct line with the trunk. On examination, the limb was found shortened; this was no doubt partly due to obliquity of the pelvis, but chiefly to the chronic changes produced in the head and neck of the bone. The muscles of the buttock were found atrophied from the disuse of the limb, but the calf was more muscular than in the opposite extremity,

from the greater degree of force required in advancing the limb. One symptom was present which is almost pathognomonic of the disease,—namely, a peculiar crackling sensation communicated to the hand on rotating the limb. In the diagnosis of this affection, it cannot be mistaken for morbus coxarius on account of the great disparity in the ages of those attacked by these widely different maladies, and also from the generally strong, healthy state of the patients suffering from the former, compared with those labouring under the latter disorder. The only difficulty in the diagnosis arises in those cases where the disease has progressed rapidly in an old patient after a fall on the hip, and where almost the same symptoms have been ultimately produced as after fracture of the neck of the femur. The treatment in E. M. was most satisfactory, much more so than can be expected in the majority of instances of this intractable disease; for after the use of the actual cautery, and the prolonged administration of the iodide of potassium, the pains entirely disappeared, and the movements of the limb were very materially improved.

A considerable number of cases of morbus coxarius occurred in both indoor and out patients; and in all in whom the disease had not gone on to suppuration, the most beneficial effects followed the use of the long splint and the internal administration of cod-liver oil, syrup of the iodide of iron, or other ferruginous tonics.

In the two cases of accumulation of fluid in the synovial sheath of the flexor tendons of the fore-arm, extending under the annular ligament into the palm of the hand, the cyst was laid freely open, and the ligament subcutaneously divided. This permitted the escape of a large number of loose fibro-cartilagenous bodies about the size of millet-seeds. In these cases there were none of the severe constitutional symptoms which frequently occur where division of the annular ligament has not been attended to; neither was there any extensive inflammation of the hand leading to contraction of the palmar fascia. The after-treatment consisted of poultices and fomentations, and the use of the douche and blisters subsequently, in order to get rid of the remaining thickening and stiffness.

Two cases of punctured wound of the wrist-joint occurred, during the session, and they both well exemplify the great dangers, and the disastrous consequences which too often result from this form of injury. The first appeared so slight that the patient could not be convinced of its serious nature, and went about his usual occupation; but within a few days, severe irritative fever set in, along with acute inflammation of the joint and fore-arm, placing his life in imminent jeopardy for several weeks. After a long period, he recovered with the mobility very considerably impaired, and had it not been for the keeping up of passive motion, and the use of the douche, after the acute symptoms disappeared, the joint would have become perfectly ankylosed. The history of E. T. is still

more unsatisfactory, for, after passing through all the dangers of irritative fever and pyæmia, the limb remained in a condition of incurable caries, necessitating amputation.

FRACTURES OF THE INFERIOR EXTREMITY.

Femur—Compound.

- W. G., admitted Nov. 25. Died Dec. 16. (Amputation.)
 W. M., admitted Dec. 4. Cured March 25. (Condyles split.)
 D. P., admitted June 30. Died July 3.
 M. I., admitted July 13. Died Aug. (Condyles split.)

Simple.

- W. G., admitted Dec. 23. Cured Feb. 11.
 M. B., admitted Feb. 17. Taken home March 3. (Fracture of the neck.)
 J. W., admitted Feb. 26. Cured April 14.
 G. R., admitted Jan. 8. Cured Feb. 22.
 W. M., admitted May 12. Sent to poor's-house, June 7. (Fracture of the neck.)

Leg—Compound.

- A. E., admitted Oct. 13. Cured Dec. 10.
 J. K., admitted Dec. 11. Cured Feb. 1.
 W. C., admitted Dec. 30. Cured. (Amputation.)
 J. M., admitted March 24. Died March 24. (Several injuries.)
 H. O. B., admitted Oct. 19. Cured Dec. 22.

Comminuted.

- M. C., admitted Oct. 25. Cured Dec. 1.
 G. G., admitted Nov. 11. Cured May 30.
 J. L., admitted Jan. 1. Cured Feb. 23.
 J. M'F., admitted Feb. 19. Cured April 25.
 M. M'A., admitted Aug. 20. Cured Nov. 4.
 J. P., admitted Aug. 21. Under treatment, Nov. 1.

Simple.

- J. F., admitted Nov. 8. Cured Dec. 18.
 M. L., admitted Nov. 13. Cured Dec. 13. (Both bones.)
 L. S., admitted Nov. 27. Cured Dec. 24. (Both bones.)
 B. K., admitted Nov. 27. Cured Dec. 19.
 J. M., admitted Jan. 1. Cured Feb. 2. (Both bones.)
 J. D., admitted Feb. 5. Cured March 5.
 D. M'K., admitted April 7. Cured May 8. (Both bones.)
 F. M'K., admitted May 6. Cured June 4.
 J. W., admitted Sept. 10. Cured Oct. 29. (Both bones.)
 B. G., admitted Sept. 10. Cured Oct. 29.
 H. M., admitted Oct. 13. Cured Nov. 23.
 G. G., admitted Aug. 18. Cured Sept. 30.
 J. C., admitted Oct. 2. Cured Nov. 29. (Both bones.)

Fibula—Simple.

- W. T., admitted Nov. 2. Cured Nov. 27.
 M. R., admitted Feb. 19. Cured March 17.
 A. C., admitted March 26. Cured April 16.
 J. J., admitted June 16. Cured July 13.

D. M'D, admitted Aug. 13. Cured Sept. 10. -
 G. C., admitted Aug. 14. Cured Sept. 26.
 D. K., admitted Sept. 29. Cured Nov. 3.
 J. K., admitted Oct. 29. Cured Nov. 5.

The majority of fractures of the inferior extremity were treated as out-door patients; the few who were admitted into hospital were dismissed after a few days' treatment, with one or two exceptions, which will be specially referred to.

DISLOCATIONS.

During the session there were three dislocations of the acromial end of the clavicle, two of the elbow-joint, two of the hip, and several of the shoulder.

Remarks.—Among the fractures and dislocations are the following cases worthy of particular notice:—1. J. C., who was admitted into hospital on account of injuries received from a large mass of earth falling on him while he was in a bent attitude. On examination he was found to have all the symptoms of dislocation of the head of the femur on the dorsum ilii, but with less marked immobility than is usual after this form of displacement. There was likewise a considerable amount of bruising about the pelvis and perinæum generally; and the sunken aspect of the patient also indicated lesions more serious than simple dislocation. From these circumstances Mr Spence suspected the real nature of the case, although no crepitus could be detected by ordinary manipulation. It was nevertheless deemed advisable to attempt reduction of the limb by pulleys. While this was being done, the rope broke; but on flexing the hip and extending it by manual force, the head of the bone was easily replaced into the socket, and while it was being reduced, distinct crepitus was elicited. A long splint was applied to prevent redisplacement, and a spica bandage to keep the pelvis firm. His water was drawn off with the catheter; it contained blood; but the instrument could be easily passed into the bladder. The symptoms of shock arising from the severe general bruising deepened, notwithstanding the free use of stimulants, and proved fatal three days after admission. On post-mortem examination, the upper portion of the capsular ligament was found torn, and the inferior margin of the acetabulum detached, thus allowing the head of the bone to pass out of the articulation, and occupy exactly the same position as in ordinary dislocation, on the dorsum ilii. In addition to this, there was fracture of the rami of the pubis on both sides, and an enormous quantity of blood effused into the cellular tissue of the pelvis and abdomen; but all the viscera had escaped uninjured.

The second case is that of M. F., who was admitted four weeks after the injury. She exhibited the signs of dislocation of the humerus into the axilla, but with less than the usual amount of flattening under the acromion, and also with a considerable enlarge-

ment of the breadth of the head of the bone. The whole limb from shoulder to palm was completely everted. All these symptoms were no doubt the result of splitting of the head of the humerus, which permitted the external rotator muscles to act unchecked. It was impossible to readjust a fracture of this kind at so late a date; and accordingly the treatment was limited to keeping up a certain degree of passive motion, so as to prevent complete ankylosis of the joint, and atrophy of the muscles.

An instance of the oblique fracture of the body and spine of the scapula presented itself in a man, R. D., who was struck on the back by a piece of the brickwork, encasing a boiler, which burst near him. The treatment, which was perfectly successful, consisted in adjusting the limb in the same way as for fracture of the clavicle, but with the addition of a broad hernia bandage round the upper part of the chest. It is curious to observe that three examples of dislocation of the acromial end of the clavicle were admitted during the session. Two of them, which were recent, were treated in the recumbent posture, in exactly the same manner as ordinary fracture of the clavicle. When at the end of a fortnight the patients were permitted to rise, the adhesions which had formed were so firm as to prevent all tendency to return of displacement. One case (G. G.) of ununited fracture of the tibia presented itself. It resulted from a severely comminuted fracture of the leg, produced by the direct stroke of the paddle-wheel of a steamer in motion. The mode of treatment first adopted, and which was afterwards persisted in for several months, consisted in placing the limb at perfect rest by means of starch bandages, and at the same time giving the patient nourishing diet, combined with small quantities of stimulants. This treatment, however, was only partially successful; and as the amount of mobility had remained unaltered for some time, a thick needle was passed between the fragments, the ligamentous union thoroughly destroyed, and the limb afterwards adjusted in plaster of Paris. On taking it down, at the end of six weeks, it was found to be perfectly firm. It is questionable whether this mode of treatment would be sufficient for the cure of flail-like false joints, but it is generally effectual in cases like the preceding, where only a certain degree of mobility remains, though quite sufficient to render the limb useless to the patient.

As a somewhat remarkable instance of recovery after a severe injury by direct violence, may be mentioned the case of J. M., who sustained a compound fracture of the femur, immediately above the condyles, accompanied with splitting of the condyloid portion into the articulation. The wound only communicated indirectly with the joint; and as it was situated on the posterior aspect, and was of no great size, while the surrounding textures were comparatively little bruised, and also as the patient was in robust health, it was thought proper to try and save the limb. It was accordingly placed in a M'Intyre's splint in the straight position, with a long splint on the

outside, and cold constantly applied to the joint. A long-continued suppuration, high irritative fever, and the formation of several abscesses in the neighbourhood, followed; but ultimately the patient recovered, and was able to stand and walk at the end of four months. The knee-joint, at the date of dismissal, was perfectly stiff.

URINARY CASES.

Lithotomy.

J. S., æt. 22, remarkably small and stunted, had suffered from stone in the bladder for fifteen years. At the date of admission he laboured under renal disorder, cystitis, and also complained of great pain when direct pressure was made either over the right iliac region or perinæum. The genitals were very large and extremely vascular. As the only chance of life depended on the early removal of the calculus, and as the patient was very anxious to have the operation performed, two large calculi were removed by the lateral incision. For a few days he went on well and made plenty of water; but symptoms of inflammation returned on the fourth, and he died on the sixth day. On post-mortem examination a large abscess was found in the right iliac fossa and around the bladder, between the peritoneum and pelvic fascia; the left kidney was completely atrophied, and the right riddled with abscesses. There was no sloughing in the course of the wound, or any sign of extravasation of urine.

G. C., æt. 80, suffered extremely from symptoms of stone in the bladder for six months previous to admission. A small calculus was removed by the lateral operation. The wound sloughed, and healed slowly; but finally the union was complete, and the whole of the urine was passed through the natural channel. After this, on the patient being raised out of bed, his legs were found unable to support the weight of the body; he was therefore compelled either to recline on bed, or sit propped upon a chair. The general weakness increased, and from the constant pressure on the back, a large portion of the skin over the sacrum sloughed. Thereafter, notwithstanding the constant care of the nurse, sloughs formed over various prominences; and under the discharge from these sources, he sank three months after the date of operation.

D. H., æt. 61, admitted with the usual symptoms of a vesical calculus. The sound was passed twice previous to the operation, and on each of these occasions there was a succession of rigors; the pulse rose, and for a day or two there was considerable disorder of the general health. On account of the persistent acceleration of the pulse, the furred tongue, and the general feeling of sickness, the operation was long delayed; but as the vesical symptoms were on the increase, and as the patient was anxious for the chance of obtaining relief, a large calculus was removed by lateral lithotomy. A few hours after the operation, blood was seen constantly dropping

from the orifice of the tube, while at intervals a larger quantity was expelled, mingled with clots. Notwithstanding different kinds of local treatment, the hæmorrhage continued unchecked; and, under the loss of blood and shock, he died on the third day after the operation.

Perinæal Section.

1. W. M., æt. 50. Stricture of the urethra, of twenty years' standing, complicated with an abscess in the perinæum. The abscess was freely opened, and one of the smallest probe-pointed grooved staffs passed into the bladder. Upon this the stricture was sufficiently divided to enable Mr Spence to introduce a larger-sized instrument and complete the section. A No. 8 catheter was then tied into the bladder. The patient recovered without an unfavourable symptom.

2. T. M., æt. 34, has for several years been accustomed to pass his water in a very small stream, and has often had attacks of retention, requiring the catheter to relieve them. On the morning of admission, he had difficulty of micturition, but, after prolonged efforts, a small quantity escaped by the natural canal, and he felt relieved. Shortly thereafter, however, the perinæum and scrotum became swollen, and feverish symptoms set in. A grooved staff was passed and the stricture divided; free incisions were at the same time made in the scrotum. The usual after-treatment was enforced; the patient went on most favourably, and was dismissed cured.

3. C. M'N., æt. 45, was admitted with retention of urine, for the relief of which attempts had been made to pass instruments without success. He was placed in a warm bath, and while in it made water. About six hours afterwards, he again felt intense desire to micturate, but was unable to do so. As only the smallest catheter could be introduced, and little water escaped through it, a grooved staff was passed into the bladder, and the patient was requested to renew his efforts while the staff was being withdrawn. With this assistance he passed a small quantity of water. After a few hours, however, he exhibited general signs, which might be either attributed to uræmia or to extravasation of urine. Under such circumstances it was essential to introduce a larger catheter, and as this could only be done after urethrotomy, the operation was performed. There was very little water in the bladder, and none escaped through the catheter during the few hours which he survived the operation. On examination there was no trace of extravasation of urine; the cavity of the bladder was much diminished, and the walls thickened; the kidneys were very much congested.

4. H. C., æt. 50, admitted 14th September, had suffered for ten years from stricture of the urethra, accompanied with occasional attacks of retention. During four days previous to admission, the micturition was difficult, and accompanied with pain in the perinæum

and thighs. On examination, the perinæum, scrotum, penis, and lower part of the abdomen, were found swollen and the glans discoloured. A free incision was made in the raphe of the perinæum; the matter which escaped consisted of pus and urine. A grooved staff was immediately passed into the bladder, the stricture divided, and a gum-elastic catheter introduced. Free incisions were then made in the infiltrated textures, and charcoal poultices applied. Although stimulants were liberally given, in order to rally him, the prostration nevertheless deepened, and he died on the fourth day after admission.

Hydatid Cyst.

J. F., æt. 55, a native of Yorkshire, was admitted August 23, suffering from retention of urine, to fits of which he had been liable for the previous eight months. On this occasion, several unsuccessful attempts had been made to relieve him before sending him to Mr Spence, who, on examination per rectum, detected a large fluctuating cyst in the recto-vesical fossa, and as the curvature of the urethra was thus increased, he selected a prostatic catheter, and introduced it without much difficulty. A large quantity of water was drawn off, but the cyst, which at first was thought to be a dilated portion of the bladder, underwent no diminution in size. This proved its independent origin, and as the man was in apparently good health, and had never suffered from inflammatory symptoms in the pelvis, and as there was an indistinct feeling of a tumour deep in the right hypochondrium, it was thought probable that this was an instance of a hydatid cyst in a very uncommon situation. The patient was kept under observation, and the water regularly drawn off. At the end of a fortnight, the cyst was tapped by a curved trochar introduced per rectum. A considerable quantity of clear fluid escaped, in which, both on ordinary visual, and in microscopic examination, numerous hydatids were detected. The discharge from the rectum continued for a few days and then ceased. The cyst refilled, but while the patient was making efforts at stool, it burst; the fluid was again submitted to the microscope, and was found to contain the shreds of broken down accephalocysts. For a short time discharge continued to be passed of a purulent character, but this gradually diminished, and ultimately disappeared, leaving only a degree of hardness in the position formerly occupied by the cyst. At the date of dismissal (10th October), the deep-seated swelling in the hypochondrium had become much more perceptible to the touch. It could then be defined as a small tumour, about the size of an orange. On his returning about a month afterwards, it had attained the size of a melon, and on his again presenting himself, at the end of two months, it filled nearly the whole of one-half of the abdomen.

Remarks.—There will be found in this report the first fatal cases

of lithotomy which have occurred in Mr Spence's hospital practice. One of the patients (G. C.), who was 80 years of age, and fatuous, suffered severely from the symptoms of stone in the bladder. The calculus was small, and in a younger person might have been crushed with the lithotrite, but in old men, where the third lobe of the prostate is enlarged, it is very difficult to seize the stone, and the detritus, prevented from escaping, is apt to form the centres of new calculi. In this patient, the operation was easily performed, the calculus being readily removed by the scoop; the wound healed slowly, but ultimately the cure was complete. As a probable cause of the sloughing in the wound and afterwards in the back, it may be mentioned that shortly after the operation, an epidemic of hospital gangrene broke out in the wards and attacked the wound in G. C. His general system was so much weakened, by the extensive sloughing, that he was incapable of rallying from the great depression of the vital powers which is invariably associated with hospital gangrene. He, however, so far recovered, that the wound was perfectly whole, and the urine passed entirely per urethram, for more than a month before his death. Previous to lithotomy being performed on J. S., it was evident, from the irritative symptoms and from the extreme pain felt when pressure was made on the hypogastrium or right ilium, that he suffered from inflammation of the bladder, and surrounding cellular tissue. Also, the general impaired state of his health, the pain in the back, the large quantity of pus in the urine, which was frequently acid and almost of normal specific gravity, without any great excess of albumen, combined with a history of fifteen years of suffering, showed that he laboured under pyelitis. The only chance of relieving these very unfavourable symptoms, was by first removing their exciting cause, and then attempting to allay them by appropriate remedies. Lateral lithotomy was therefore performed shortly after his admission; for a few days he improved wonderfully, but the inflammatory affections which at first seemed subdued were rekindled, and he sank. There was present in this patient a symptom which is not described in books, and which was only explained at the time of the operation. He had long suffered from intense deep-seated pain when pressure was made on the perinæum; this was found to arise from the presence of two vesical calculi placed directly over each other, the superior one being driven against the inflamed and hypertrophied bladder whenever the shallow perinæum was pressed upwards. The third patient, D. H., was also a very unfavourable case for operative interference, from his general health being greatly impaired, and from the intense irritative symptoms that were wont to follow the introduction of the sound. After the operation was performed, a passive hæmorrhage came through the tube, and was unchecked by all those means which usually suffice to control bleeding from the veins of the prostate. As a post-mortem examination was refused, it was impossible to determine the source of this hæmorrhage; but it is highly probable that it was renal, or from the interior

of the bladder, seeing that the blood was equally mixed with the urine, and always came through the tube. Besides, for a long time he had been accustomed to pass those sanguineo-fibrinous casts which are so characteristic of renal hæmaturia.

The complications accompanying the cases of stricture rendered urethrotomy preferable to dilatation or splitting. In two of the patients there was extravasation of urine, and in a third an abscess, both of which conditions necessitated the making of incisions in the perinæum; by prolonging these a little deeper, the strictures could be divided. In T. M. the infiltration of urine had just begun, and the necessary treatment was successfully enforced; but in H. C., the vitality of the textures was destroyed, as was indicated by the state of the glans penis, and the chances of recovery were almost *nil*. C. M'N. deserves particular notice, because, until after the operation, it was doubtful whether this patient suffered from retention and extravasation, or from uræmia. He had been for years troubled with a tight stricture of the urethra, and on the evening before admission had been unable to micturate. He felt all the symptoms of retention, although the bladder could not be detected in the hypogastrium, yet, as a small quantity of water will produce this feeling in a hypertrophied viscus, and also because only the smallest catheter could be introduced, which gave no definite information, Mr Spence considered it essential under such circumstances to perform urethrotomy, in order to pass a full sized instrument into the bladder. When this was done, the viscus was found almost empty. The true nature of the case was then evident, and measures were directed towards bringing about the secretion of urine; but the kidneys never responded, and a fatal issue speedily supervened.

The case of hydatids is interesting from the rarity of this affection in Scotland; from the symptoms leading to a correct diagnosis of its nature; and from the effective treatment without any tendency of the inflammation of the cyst to spread to adjoining organs. The rapid growth, too, of the hepatic tumour has been noted from its outset, and the question of its treatment will shortly require to be decided.

Hernia.

1. M. M., æt. 37, admitted 31st October, on account of a strangulated femoral hernia which had been down thirty-six hours. She had suffered considerable inconvenience from it during the preceding nine years, but it could always be easily reduced. This time, however, the taxis failing, the patient was placed under chloroform, and the usual operation performed. The wound healed slowly. Dismissed, 3d December, cured.

2. M. C., admitted 5th November, had suffered from femoral hernia for eight years, but could always reduce it, up to the 28th October. On that occasion, her own attempts failing, she sent for a medical man, and, after repeated efforts, he also was unable to

replace the bowel. On the 30th, she began to vomit, and on the 3d November, the ejected matter had a feculent odour. On admission the tumour was found tense and painful, the patient exceedingly prostrate, and the pulse quick. With such symptoms, as an operation was imperative, it was without delay performed in the usual manner. When the bowel was exposed, it was seen to be very dark, congested, gangrenous-looking, and, after carefully pulling it down so as to exhibit the constricted portion, a small perforation was detected at the point of greatest pressure. The bowel was laid freely open, moderately warm poultices applied to the wound, and an opiate administered. On the 9th November, she complained of the usual symptoms of peritonitis, and of this she died on the 11th.

3. B. S., æt. 62. Strangulated femoral hernia, which had been down twenty-four hours. Under chloroform, the taxis failing, the extra-peritoneal operation was performed. Cured.

4. E. M'M., æt. 19. The hernia had been often down during the previous six years, but could always be easily reduced up to the morning of admission. The taxis was carefully tried after the patient was completely under the influence of chloroform. It was, however, of no avail, and an operation was had recourse to. The sac contained a large quantity of dark-coloured fluid, with a small knuckle of highly-congested bowel projecting through the femoral canal. Cured.

5. T. W., æt. 65. Strangulated inguinal hernia; bowel down three days. On admission this patient had feculent vomiting, hiccup, and other signs of long-continued strangulation. He nevertheless would on no account submit to an operation. As the patient evidently was mentally deranged, it was determined to send for another surgeon, and, if he deemed an operation necessary, to perform it without the patient's sanction. While the state of the tumour was being re-examined, the pressure of the manipulation forced the bowel back into the abdomen. The constitutional symptoms continued, and he sank on the fourth day. On post-mortem examination the portion of bowel which had occupied the hernial sac was found to be dark and gangrenous, and at one point perforated; there were also evidences of general peritonitis.

6. J. B., æt. 34. Strangulated inguinal hernia, which the taxis under chloroform failed to reduce. Operation. Cured.

7. J. M. Strangulated inguinal hernia. The bowel in this instance was only down a few hours, but the general constitutional symptoms were well marked. The tumour had become tense and red, and the taxis failed. Operation. Cured.

Remarks.—The subject of hernia has been so fully discussed in the preceding reports as to render it merely necessary to indicate here, in how far these seven cases corroborate the general views formerly expressed. The operation was performed in five of the cases immediately after the well-applied taxis with adjuvants had

failed, and in all these instances it proved perfectly successful. Both the examples of inguinal hernia were congenital, and as the stricture was situated in the thickened neck of the sac (the canal of Nuck), it was absolutely essential to open this structure before effecting the reduction of the contents. Again, in the cases of femoral hernia, the extra-peritoneal operation was performed on B. S., while in E. M'M. it failed on account of the stricture being in the neck of the sac itself. The former method of operating is preferable where the patient is seen early, and where the contents can be easily reduced while the sac is temporarily retained, so that there is a certainty of there being no further constriction at its neck, and in these cases the incisions cannot superadd danger to the taxis, inasmuch as only superficial textures are divided. The two remaining cases illustrate the risks arising from delay. When the sac was opened in M. C. the bowel was observed to be gangrenous, but no perforation was visible until after gently pulling down the gut and exposing the part which had been directly constricted, and which is always the first to give way. As there was a small opening at this point, the stricture was freely divided, the bowel left unreduced, and moderately warm poultices applied. At the end of a few hours, when sufficient lymph had been thrown out to bind the intestine to the abdominal wall and prevent the regurgitation of fecal matter, it was laid freely open. Under such circumstances there was little hope of the patient surviving long. Peritonitis had set in previous to the operation, and she sank within a few days under its more fully developed symptoms. In T. W. the bowel was, no doubt, in a similar condition. Mr Spence, in this case, did not attempt the taxis, as the only chance of recovery, though a feeble one, depended on the laying open of the sac and permitting the contents to escape externally. While, however, the tumour was being examined by another surgeon, it went back into the abdomen. This accident is very liable to happen in advanced cases where the bowel has become gangrenous and flaccid; but it ought, as far as possible, to be guarded against, as extravasation of fecal matter into the peritoneal cavity must then ensue, and this is invariably followed by a fatal result.

MISCELLANEOUS.

M. W., *æt.* 6, suffered the loss of nearly half the upper lip and a portion of the left cheek, from an attack of *cancrum oris* following on measles. On admission, a firm cicatrix had formed at the upper part, while, below, the gum was left exposed. When the patient's health was completely restored, Mr Spence determined to perform a plastic operation, and this was done in the following method:—The firm cicatricial tissue was first carefully removed, the attachments of the cheek to the maxilla were then separated, and, in order to allow the two widely-separated margins to be brought together, an incision was carried directly outwards from the angle

of the mouth. The edge of the cheek and lip were then brought together, and the sides of the latter incision opposite the mouth were stitched together so as to form a lower margin to the new upper lip. The wound healed readily, and though for some time the side of the cheek looked tense, the tissues have gradually relaxed and filled up, so that the child is now quite comely in appearance.

J. W., æt. 10, sustained an injury about the elbow-joint several years before admission. On taking the limb down she says that it was flexed at the wrist, and has remained so ever since. The flexors of the carpus were subcutaneously divided, and the limb extended on a splint. Passive motion was thereafter kept up, and, after a time, douches and galvanism employed to stimulate the muscles to contraction. On dismissal she could flex and extend the wrist, but with no great force, on account of the atrophied state of the whole muscles of the forearm.

ARTICLE III.—*Cases illustrating the Modes of Treatment of some of the Diseases of the Rectum.* By THOMAS ANNANDALE, F.R.C.S.E.

THE following cases, most of which have occurred in Mr Syme's practice, have been selected from my note-book to illustrate the treatment of some of the affections of the rectum.

Internal Hæmorrhoids.

CASE 1.—Miss J., æt. 60, came from England to be under Mr Syme's care, on the 25th of June 1863. The patient has been troubled with internal hæmorrhoids for thirty years. During all this time she has suffered much inconvenience from the complaint, and has been frequently blistered and bled for what was supposed to be heart-disease. For the last twenty-six years the patient has been a confirmed invalid, being quite unable to go about. Miss J. has also during all this time constantly worn an apparatus to keep up the protruded parts, which came down on the slightest exertion. On examination, there was a large mass of a bright red colour protruding from the anal orifice; the protrusion consisted of four distinct masses, which altogether formed a tumour the size of a child's head. The patient was able to return the tumour within the sphincter, by gradually compressing it and pushing it upward.

26th.—The patient's bowels having been freely opened by means of castor oil, ligatures of strong silk were applied in the usual manner round the four tumours. After the application of the ligatures, three of the tumours were completely strangulated; but the fourth not being thoroughly destroyed, a second ligature was applied round its base. The parts could not be reduced after the operation, and were therefore left protruding. The patient suffered

a good deal of pain for the first few hours after the operation, but at the end of this time the pain subsided. A poultice was then applied to the parts, which were quite black and appeared quite dead.

27th.—The patient has passed a quiet night.

28th.—Has passed another good night. The tumours are beginning to soften, and their surfaces in some parts have a sloughing appearance. There is wonderfully little irritation around the ligatures. A little wind and fecal matter passed to-day, which relieved some little uneasiness that she had felt in the bowels.

29th.—Has passed a good night; the tumours are beginning to separate.

3d July.—Bowels were well opened with castor oil.

6th.—Two of the ligatures have come away. The patient feels weak, but is otherwise going on well.

12th.—All the ligatures have come away.

19th.—Patient was up to-day, and lay on the sofa. Her health is very much improved. The sores left by the separation of the ligatures are healing nicely.

24th.—Patient says she has not enjoyed such good health and comfort for many years. She sits up all day.

8th August.—Patient returned home quite well.

I have heard of this patient very lately, and she remains perfectly well.

CASE 2.—Mr M., æt. 82, came to Edinburgh, to be under Mr Syme's care, on the 15th of July 1863. The patient had suffered from internal hæmorrhoids for twenty years. These had given much annoyance at times, but lately have become very troublesome.

On examination, there was a tumour the size of half a large orange, of a bright red colour, protruding from the anus. The tumour consisted of two masses of equal size, and could be returned within the sphincter, but very readily came down again.

16th July.—Ligatures were applied to the tumours in the usual way, and they were then returned within the sphincter.

17th.—Patient had retention of urine last night, requiring the catheter, but is otherwise well.

19th.—Retention of urine still continues. The ligatures are beginning to separate, the strangulated masses lying partly within and partly without the sphincter.

22d.—Patient can now pass his water himself. The ligatures have all come away, and the wounds are cicatrizing.

1st August.—Has been gradually improving since last date. He now sits up daily.

30th.—Is now quite well and able to return home.

CASE 3.—Mr C., æt. 50, came from Ireland to be under Mr Syme's care. The patient has suffered from internal hæmorrhoids for eight or nine years. They always come down when he is at stool, and occasionally bleed very freely. If he goes about after

the bowels are moved, the piles also come down and give him much inconvenience.

Three years ago, nitric acid was applied five or six times to the internal piles. These applications gave him much pain, and quite failed to relieve the complaint. Four months ago, several severe attacks of bleeding took place from the piles, which left him very weak.

On regaining a little strength, he came here to be treated.

On examination there were three internal piles, two of them the size of a filbert-nut each, the third a little smaller. One of the tumours had a white mark on it, caused by the previous applications of the nitric acid. There were also some loose folds of skin external to the sphincter. The piles were ligatured in the usual manner, and the loose folds of skin snipped off.

The patient had retention of urine for the first twenty-four hours after the operation, but after this he regained the full use of his bladder. At the end of a week the ligatures came away, and in another week he was able to go about, cured of his piles.

CASE 4.—J. P., æt. 40, admitted into the clinical surgical wards of the Royal Infirmary on the 26th of January 1864. The patient has had internal and external hæmorrhoids for sixteen years. During all this time he lost more or less blood whenever he went to stool, and latterly he has suffered from headaches and palpitations of the heart. In the years 1856 and 1860, he had nitric acid applied to the internal piles when in South America. These applications gave him temporary relief, but did not cure the disease.

On admission here, the patient was found to have both internal and external piles. The former were ligatured in the usual way, and the latter were cut off. When the ligatures came away the patient was dismissed, cured of his complaint.

CASE 5.—In March 1863, I was asked by Dr Begbie to take charge of Mr M., æt. 74. On visiting the patient, I was informed that he had suffered from internal hæmorrhoids for many years. These were constantly coming down, but he was always able to return them until two days before I saw him. At this time they had come down as usual, but on attempting to reduce them he could not succeed. He suffered a good deal of pain round the anus, and had considerable irritation of the bladder all the next day. On the second day, complete retention of urine had come on. Having relieved the retention of urine by the introduction of the catheter, I examined the parts behind, and found four small internal hæmorrhoids, each about the size of a large bean, protruding from the anus. The tumours were tense and very tender to the touch, and there was swelling and œdema all round the margin of the sphincter. Warm fomentations were ordered to be applied to the region of the anus. Three days after, the swelling round the anus had diminished, and the piles were less tender to the touch, but showed no signs of decreasing in size, and could not be returned within the sphincter.

The protruded hæmorrhoids were therefore ligatured in the usual way.

At the end of a week the ligatures separated, and the patient was very much better. The retention of urine still continued, but the patient having been taught to pass the catheter himself, I discontinued my visits. I saw the patient a few weeks afterwards, and found that he had regained the full use of his bladder, and was perfectly free from any affection of the rectum.

CASE 6.—A. T., æt. 55, admitted into the clinical surgical wards of the Royal Infirmary Sept. 8, 1863. The patient has been troubled for a considerable time with internal hæmorrhoids, which occasionally come down and give him much annoyance. On the 13th, they came down, and he could not return them; but he applied to a medical man, who at once reduced them. Very shortly after this they again came down, and have remained so until his admission here. On examination there were found two large internal hæmorrhoids, each the size of a pigeon's egg, protruding from the rectum. One of the tumours was in a state of gangrene. Poultices were applied to the swelling for some days.

12th October.—The pile which was affected with gangrene is gradually becoming destroyed; the remaining one was to-day cut off.

19th.—The patient is now convalescent, and was dismissed to-day, cured of his complaint.

CASE 7.—In July 1863, I was asked to see Mr S., æt. 22, who was suffering from severe pain and a swelling in the region of the anus. A few days before I saw him he felt a pain when at stool, and then noticed for the first time a small tumour at the side of the anus. The patient had never suffered from any affection of the rectum previous to this, and was quite sure that the tumour had only formed very recently.

On examination there was a tumour the size of a small cherry on the right side of the anal orifice. It was of a bluish colour, but very tense, and was very tender when touched. The patient had excruciating agony when he attempted to go to stool. Ordered to keep in bed and apply warm fomentations, and to take a gentle laxative to open the bowels. At the end of four days the tumour, under this treatment, became much less painful, and felt harder to touch. An incision was made through the tumour, and a small, round, firm clot of blood removed from its centre. The swelling immediately became much diminished, and in a few days the patient was perfectly well, not the slightest trace of the tumour being left.

I saw this patient lately, and found that he had remained perfectly free from any affection of the rectum.

Remarks.—I have chosen cases 1 and 2 from a considerable number of examples of internal hæmorrhoids successfully treated

by ligature. Both of them were very aggravated, and, as far as I am aware, unprecedented examples of this affection; and although the one patient was in delicate health and the other far advanced in life, the operation by ligature completely and safely cured the complaint from which these two patients had suffered so long. Notwithstanding that the tumours operated on in these two cases were so much larger than those which are usually ligatured in internal hæmorrhoids, no bad symptoms followed the operation. The sores left after the separation of the ligatures were, as was to be expected, larger than usual, and therefore took longer to heal; but the result in both instances was quite as satisfactory as in the most simple cases of the disease.

In cases 3 and 4 the treatment of internal piles by the application of nitric acid seemed to have had a fair trial, but it had entirely failed to cure the complaint. As the employment of the ligature in such affections is proved to be so safe and certain a remedy, it is much to be regretted that other means, which are uncertain, tedious, and painful, should be used in the treatment of this disease.

Cases 5 and 6 are examples of internal hæmorrhoids which, having come down, could not be returned within the sphincter. In such cases more or less inflammation usually attacks the protruded parts, and this may lead to a spontaneous cure of the complaint. If, after the application of soothing means, the piles still remain unreducible and do not diminish in size, they may either be cut off, as was done in case 6, or they may be ligatured in the usual way.

In case 5 I preferred applying the ligatures, because the tumours still possessed vitality, and if they had been cut off, troublesome bleeding might have ensued.

Cases, such as No. 7 illustrates, may be successfully treated in the way I have described. In the case just mentioned there had been no previous affection of the rectum, and as the disease was circumscribed and small, I thought it sufficient to incise the tumour. If, however, external piles should have existed before the inflammatory attack, or if the tumours are extensive, it will be best in most cases to cut off the whole disease, after the inflammation has subsided, because we find that even a small enlargement of the skin near the orifice of the anus may interfere with the proper action of the sphincter muscle.

Prolapsus Ani.

CASE 8.—Mrs —, æt. 55, came to Edinburgh, to be under Mr Syme's care, on the 9th of January 1864. The patient has been troubled with a protrusion of the bowel for three or four years. During the last twelve months the gut has been almost constantly protruded, and has given rise to great inconvenience and much suffering. The protruded portion can be readily returned, but on

the slightest exertion it comes down again; so that whenever the patient moved from the horizontal position the gut remained down.

On examination there was a protrusion of the bowel four inches in length; it resembled, in appearance, the prolapsus which is not uncommon in children; and was easily returned within the sphincter. When returned there could be seen round the margin of the anus several folds of loose skin. No other affection could be detected.

7th.—To-day, Mr Syme cut off the loose folds of skin, and returned the protrusion. The patient was strictly ordered to keep the horizontal posture.

10th.—There has not been the slightest protrusion, and the bowels were opened to-day for the first time since the operation.

12th.—The patient still retains the horizontal posture. No return of the protrusion.

14th.—Bowels were opened to-day twice, with castor oil, but not the least prolapsus took place.

21st.—For the last two days the patient has been up in the sitting-room, and feels now perfectly well.

23d.—Patient returned home to-day, quite cured.

Remarks.—Prolapsus ani in the adult is not a common disease. The last case is a well-marked example of this affection. The treatment adopted, apparently so simple, was quite successful. The patient never had the slightest protrusion after the operation. It is difficult to explain why the removal of a little loose skin from the margin of the anus should so thoroughly and immediately cure this formidable condition of the rectum. It would appear that any alteration of the parts in the neighbourhood of the sphincter ani muscle prevents the proper action, or leads to excessive irritability of the muscle, and thus gives rise to many of those unpleasant and painful symptoms which attend certain of the diseases of the rectum; for we find in such cases that by removing the cause of irritation, and restoring the muscle to its healthy action, we most speedily and surely cure the affection of the rectum.

ARTICLE IV.—*Observations on Heat Apoplexy.* By J. BONNYMAN, M.D., Assistant-Surgeon, 89th Regiment.

THE following remarks on *heat apoplexy* are offered in the hope of adding to the information we possess regarding a disease that has hitherto, for the most part, been overlooked by systematic writers on medicine. This omission has chiefly arisen from the rare occurrence of the disease in England and on the Continent, and the consequently few opportunities enjoyed by European physicians of treating it. The negative characters of *post-mortem* appearances in those who have died of the malady, as well as the difficulties attending patho-

logical inquiries in hot climates, have doubtless also tended to retard the progress of information on the subject. In consequence, however, of the increase that has lately taken place in the strength of the British force stationed in India, and the frequency and fatality, at certain seasons, of heat apoplexy among the troops composing it, the attention of military medical men has latterly been directed to a more close investigation into the nature of this affection; and it is to be hoped that accumulated observation and experience will lead to a thorough appreciation of its causes, and to more successful results than have hitherto attended its treatment.

Heat apoplexy, or, as it is frequently denominated, *sunstroke*, is essentially a disorder of warm climates. It is common to both the white and the coloured races of mankind; but, as will be seen hereafter, the former are more prone to its attack than the latter, and though the male sex is more obnoxious to it than the female, yet the latter not unfrequently fall victims to it. Age does not appear to exert much influence in its causation, for it is met with at ages varying from five to fifty years; nor does it attack the weakly and spare in preference to the strong and robust, both being equally liable to its invasion. The only condition that is invariably present during its prevalence is a high atmospheric temperature. Moisture and dryness appear to be little concerned in its production, for, in most parts of India, during May and the first half of June, the atmosphere is hot and dry, and then heat apoplexy is more rife than at any other season. On the occurrence of the rains towards the end of June, and during July and August, when the temperature falls, it becomes rare, again appearing, but for the most part to a less extent, during the months of September and October, when the air has again become hot, but now loaded with moisture. During the summer of 1860, in consequence of the lateness of the coming on of the rains, the hot season was of longer duration and more severe than usual, and, accordingly, in very hot stations, like that of Jhansie, heat apoplexy was of very frequent occurrence up to the end of July.

During its prevalence the atmosphere is generally observed to be calm and still, conditions which always add to the intensity of the feeling of heat. Though no fixed temperature, as indicated by the thermometer, can be specified as the point at which cases of this disease begin to show themselves, yet it may be observed that, when a still and tranquil air, for several days in succession, reaches in the shade 96° Fahrenheit, then ought those concerned to be on the watch for, and prepared to meet, this most formidable malady.

In England and other temperate countries, the few cases of sunstroke that occur are brought on by exposure, during warm summers, to the direct rays of the sun; and some of the most intractable and speedily fatal cases of the disease in hot countries, are induced by a like cause. But though direct exposure to a burning sun may undoubtedly occasion an attack, yet this is by no

means an essential condition. By far the greater number of cases that yearly occur in India are those of men who have not been so exposed. It is not unusual for men who go to bed in apparent health to be seized during the night, and patients in hospital, who have been confined to bed for days previously, are frequently the subjects of attack. Great atmospheric heat, then, appears to be the condition chiefly concerned in the production of the malady, and whatever assists in rendering heat oppressive, as stillness and closeness of the air, overcrowding and deficient ventilation, assists also in disposing to a seizure.

The predisposing causes are not very evident; the principal may be said to be those of a debilitating nature, as, mental depression, anxiety, great bodily exertion, fatigue, intemperance, suppressed perspiration, and existing disease, particularly in any of the depurating organs. Those who have a constitutional tendency to cerebral disorder, or to derangement or irregular circulation of the blood within the head, are also probably more liable to be affected.

The disease is sometimes preceded for a few hours, or even days, by a feeling of general uneasiness, or by symptoms referable to the head; but it often comes on suddenly without any warning, the patient being seized with loss of consciousness, sensation, and voluntary motion, breathing stertorously, and expiring in ten or fifteen minutes. In the following account it is proposed to divide the description of the disease into two parts, describing first that mode of attack in which the disease comes on more slowly, and which may be named the *gradual* or *progressive* form; and, secondly, that in which the patient is struck down suddenly, with little or no premonition, which may be called the *sudden* or *severe* form.

When premonitory symptoms show themselves, they are sometimes slight, at other times well marked. Those usually observed are,—inaptitude and disinclination for any exertion, drowsiness or a desire to sleep, vertigo, headache, and slight confusion of ideas; the patient feels weak and nervous, sighing frequently; the appetite is gone, thirst is increased, and the bowels are constipated. Drs Longmore and Simpson mention irritability of the bladder, with a frequent desire to micturate, as symptoms often observed by them.

If the disease proceed unchecked, the symptoms become aggravated, and the patient either passes into a state of profound coma, or the symptoms of the first or progressive form of the malady are complained of, viz., distracting headache, with a feeling of weight and heat in the occiput, tightness, distention, and throbbing in the forehead and temples, anxiety at the præcordia, nausea, and a disposition to vomit. A sensation of sinking or of insupportable weight and uncasiness, is referred to the pit of the stomach, and a feeling of horror or of impending calamity, with a tendency to weep, is experienced. The breathing is natural, or slow and sighing. The face is generally natural, sometimes flushed; eyes bright, pupils either natural or somewhat contracted. The skin is very

hot and dry; the pulse is full and accelerated; tongue white; thirst intense; the bowels are confined, and the urine suppressed. The patient is generally distressed and agitated, and speaks in short, broken sentences. If these symptoms persist, tetanic convulsions suddenly appear, and the patient lapses into the second or severe form of the disease.

Though the severe form of the malady often supervenes on the first or progressive form, yet it is by no means rare for the former to appear suddenly without this sequence being observed. The symptoms of this form are,—tetanic convulsions, lasting for a few minutes, and followed by profound stupor from which the patient cannot be roused; relaxation of the muscles; slow, deep, stertorous breathing, sometimes accompanied by a loud, prolonged, painful moan or cry. Skin intensely hot and dry. Partial perspiration about head. Countenance pale; no distortion of face. Eyelids closed; pupils at first contracted, but, before death, becoming widely dilated. Pulse at first full, quick, and bounding, afterwards becoming quick and weak. Heart's action violent. Sometimes a recurrence of the convulsions takes place, the breathing becomes more and more laboured, and the expired air cold; attempts at vomiting occur; froth appears at the mouth and nostrils; and death closes the scene.

When the disease comes on gradually, the recognition of the earliest symptoms of its approach is of the greatest importance, as judicious measures employed in this stage are likely to prove useful in cutting short, or in preventing, an attack. Intense headache, burning heat of skin, and a feeling of overpowering load at the epigastrium, are grave symptoms, as there is then imminent danger of the occurrence of convulsions and coma. On the supervention of the latter symptoms with stertorous breathing, an unfavourable issue may generally be expected: few patients recovering from this state.

The duration of an attack varies. When it comes on gradually, one or two days may elapse before the patient seeks for assistance. But when the disease is well marked, it seldom lasts longer than two days,—an amelioration or aggravation of the symptoms occurring in that time. In the sudden form of attack, or on the patient lapsing into the complete form of the disease, death generally takes place in a period of time varying from ten minutes to twelve hours. The favourable signs are,—the return of consciousness, if the patient had previously been insensible, the abatement of headache, the diminution of heat and of pungency of skin, the lowering of the heart's action, general perspiration, the action of the bowels, and a free flow of urine. In those who recover, the return to health is for the most part slow,—patients being often subject for a long time to occipital pain, and to a feeling of distention in the upper part of the head, the circulation within the cranium appearing to be deranged by the slightest causes. Some patients recover their health in India, on the coming on of the cold season, while others require a change to

a temperate climate to effect a complete cure. It is probable that in this respect much depends on original differences of constitution. Other cases, on recovery from the more immediately dangerous symptoms, are attacked by agues or remittents, and after a period of several weeks die exhausted, the functions of the skin and of the other emunctories never having been completely restored. While a few cases recover rapidly and completely, the majority, on exposure to the sun for any length of time, are ever afterwards liable to headache. Irregular and involuntary twitchings of the muscles of voluntary motion are sometimes observed as sequelæ of this affection. The pupils sometimes remain dilated throughout convalescence, and irritability and increased action of the heart on the slightest exertion, are often troublesome symptoms during that period.

Relapses are frequent. Those who recover from the more dangerous symptoms require for some time afterwards to be frequently seen and carefully watched, as sleep may come on, and the symptoms recurring, the disease may have advanced too far before attention is directed to the patient's state.

The symptoms of the sudden and severe form of the affection are similar in many respects to those of asphyxia, poisoning by narcotics, insensibility from drunkenness, and to those of the ordinary apoplectic seizure; while the gradual or progressive form appears to be allied to severe inflammatory fever, as described by Dr Copland.¹ The symptoms of all these states of disorder more or less closely resemble those of the disease under consideration; and this coincidence might almost be looked for, since, as will be pointed out in the sequel, nearly similar states of the system may be inferred to exist in the whole of them.

The appearances after death, observed in those who have died of heat apoplexy, without any complication or co-existent disease, are pretty constant and unvarying. Irregular patches, of a livid red colour, are seen scattered over the whole external surface of the body; those over the neck and dependent parts being large, while those on the anterior surface are smaller and more numerous. These blotches not unfrequently begin to form before life is extinct. Rigidity of the muscles is slight or absent, but this is probably due to *rigor mortis* being incomplete at the time of examination, in consequence of the short time that in hot countries is allowed to elapse between the occurrence of death and the period of sepulture. The features are generally natural, face pale, eyes bright, pupils dilated. Froth, occasionally mixed with blood, is seen about the mouth and nostrils. The abdomen sometimes becomes much inflated soon after death, and the whole body retains the animal heat for a long time. On opening the head, the encephalon and its membranes are found congested, and the veins and sinuses full of dark blood. A quantity of clear serum is generally discovered at the base of the

¹ Dict. Prac. Medicine, vol. i. pp. 976-79.

brain. The cerebrum and cerebellum, on being cut into, exhibit many vascular points, but in other respects they are, for the most part, firm and healthy. The lateral ventricles are found full of a clear serum, and the choroid plexuses are generally pale and shrivelled. The lungs are gorged with dark blood, and the bronchi filled with frothy mucus. The right side of the heart generally contains fluid or semifluid blood, and the left side is empty. The liver, spleen, and kidneys, partake of the general congestion. The blood throughout the body is of a dark colour and fluid, a great quantity of it draining from the head during the examination of the brain.

Since it has been found that the disease occurs only when a high temperature prevails for a prolonged and continuous period, we are naturally led, in attempting to ascertain its origin and nature, to inquire in what manner animal life is affected by great heat; what organs are thereby influenced; what functions undergo increase, and what decay. The usual effects of increased atmospheric heat are, augmented cutaneous transpiration, diminished excretion of urine, thirst, languor, depression, and accelerated circulation. Besides these effects, however, Crawford, Prout, Copland, and other observers have found, that, during elevated temperatures, the blood, in the process of respiration, does not undergo the usual changes. This subject has also lately been fully investigated by Dr E. Smith,¹ who has shown that all the respiratory phenomena are lessened during the hot season. The quantity of carbonic acid expired by the lungs, in a medium temperature during spring, was found by this writer to exceed by one-third that evolved during summer and autumn. From this it must appear evident, that, unless the waste of the tissues proceed much less rapidly in hot than in cold seasons and climates, either the excretion of carbonic acid from the system must, in the former, be vicariously performed by other organs, or a large accumulation of carbonaceous matters must take place in the blood. But, as in warm climates the waste of the tissues is not diminished, the duty of eliminating the carbonic acid, usually evolved by the lungs, is thrown upon the other emunctories,—upon the skin, kidneys, liver, and intestines; and, on this account, the latter organs, particularly the liver, intestines, and skin, are in hot countries specially prone to disease. The influence of atmospheric heat, in increasing the quantity and in altering the quality of the bile, has been noticed from the earliest ages, and there can be little doubt that these changes owe their origin to the presence in the venous system of matters usually removed from the circulation by the pulmonary organs. In the dark-skinned races the lungs and liver are small, but in them the skin is modified, so as, to a great extent, to perform the eliminating processes, which in the white races are effected by the former organs. Dr Copland ascertained by actual

¹ On the Chemical and other Phenomena of Respiration.—*Philosophical Transactions*, 1859.

experiment that the skin of the negro excreted carbonic acid more abundantly than did that of the white races; while the lungs of the latter evolved more carbonic acid than did those of the former. It is clear, therefore, that the lungs, liver, and skin eliminate from the system effete and closely related matters, which, if permitted to remain, will necessarily exercise a very injurious influence; and that these organs, in the different races of mankind, act supplementally of each other: in the one, one organ acting energetically, while in the other, another performs an increased function. In all races, and on all occasions, it is absolutely necessary, however, that the depurating process be constantly and fully performed by one or more of the emunctories, otherwise the blood must soon become so loaded with excrementitious matters that its normal qualities will be destroyed, and through it the whole system poisoned.

It has been shown that, when high ranges of temperature prevail, the blood undergoes imperfect purification in the lungs; and in enumerating the symptoms of heat apoplexy, the skin was described as hot and dry—hotter and drier than in perhaps any other known affection—the urine as nearly suppressed, and the bowels as constipated. From this it is manifest, that in this disease not only do the other emunctories not make up by an increase in their functions for the deficient respiratory changes, but that they themselves also cease, in a great measure, to perform their depuratory office. And when it is borne in mind how absolutely necessary, for the welfare of the body, and even for the existence of life, the proper performance of the functions are, it cannot be matter of surprise that, on the interruption of function of so many important organs, as the lungs, kidneys, skin, and intestines, disease of a grave character should result. That the retention in the system of matters that ought to be eliminated is intimately concerned in the production of the disease is further demonstrated by the large quantities of black morbid matters that continue, for some time afterwards, to be evacuated from the bowels of those who recover from the malady.

At this stage it may be inquired, what are the effects, as far as they have been ascertained, which result from the non-separation of the effete and noxious matters generated within the body? In the case of the skin, the checking or sudden suppression of its function induces some of the most acute febrile and inflammatory disorders to which the body is subject; and injuries involving a considerable portion of the cutaneous surface, as burns, are well known to terminate fatally more frequently than might *a priori* be expected, when, simultaneously with the injury, the integrity of all the other organs is taken into consideration. When suppression of the renal secretion occurs, coma and death soon supervene; and inaction of the liver and bowels is followed by derangements of various kinds. Carbonic acid, one of the best known of the eliminated matters, is given off abundantly by the lungs and also by the skin; and some information may be gained of its action, when non-elim-

nated, from observing its mode of operation when entering the system from without.

It is well known that when an animal attempts to breathe pure or nearly pure carbonic acid gas, spasm of the glottis takes place, and death rapidly follows from asphyxia. Besides this effect, however, several authors have described another and different method of operation of this poison, whereby death occurs more slowly, and apparently otherwise than by the exclusion of oxygen from the air-passages. Dr Golding Bird,¹ who himself suffered several times from exposure to an atmosphere containing a large amount of carbonic acid, collected all the recorded cases of poisoning by this substance; and from the symptoms observed in those cases, as well as from experiments made by himself and others, he concluded that, diluted, it operated as a specific poison, acting on the nervous system, and producing apoplexy, often attended by serous effusion within the head. To those familiar with the symptoms and appearances of heat apoplexy, it will scarcely be possible to peruse Dr Bird's account of slow poisoning by carbonic acid gas, without being struck by the coincidence of the symptoms, as also of the post-mortem appearances, in the two diseases. And if we reflect that breathing an atmosphere containing only four per cent. of carbonic acid soon brings on intense headache, with other symptoms of the first stage of poisoning by this substance, it need not appear wonderful that similar symptoms present themselves, when, as occurs in heat apoplexy, the chief eliminating agents of carbonic acid from the body, namely, the lungs and the skin, cease to a great extent to perform their functions.

In the advanced stage of heat apoplexy, it has been shown that all the depurating organs cease to act; but the order of cessation in the different functions has not been observed. As, however, the experiments of Dr E. Smith prove that the higher the temperature of the atmosphere rises, the less becomes the amount of carbonic acid exhaled by the lungs, it is probable that the blood first undergoes alteration, and that, almost simultaneously with the blood, the organic nervous system becomes affected. Thus the blood is changed, and the functions of organic life are impaired from the outset of the disorder.

Cases of intermittent and of remittent fever not unfrequently terminate in heat apoplexy; and in these the patients are said to die *apoplectic*, though in the mortality returns death is ascribed to the disease for which the patients were admitted into hospital, namely, fever. On this account the number of those who die of heat apoplexy often appears less than it in reality is; and to the disease occurring in this secondary manner, as it were, is to be ascribed the rareness with which mention is made of it by the older Indian writers. Heat apoplexy, no doubt, occurred formerly as often as it does at the present time, but it was not described as heat apoplexy,

¹ Guy's Hospital Reports, vol. iv. 1839.

being looked upon, except when suddenly attacking those previously in health, as ordinary apoplexy occurring in the course of fever.

The exhalations arising from marshes and stagnant water have generally been considered as the only exciting causes of periodic fevers. Further investigation, however, will probably show that intermittent and remittent fevers and heat apoplexy are due to the same or closely allied causes. It has been seen that the last-named of these affections acknowledges great and continued heat as its essential cause. And though marsh exhalations are doubtless very frequent causes of periodic fevers, yet great atmospheric heat appears also to be often their sole cause.

The 89th Regiment, during its service in India, has never been stationed in marshy localities. The men may have often passed through unhealthy tracts of country, and been exposed to privation in many ways, but it was when quartered in very hot stations that they suffered most from fevers.

At Deesa, a dry, sandy plain in the province of Guzerat, agues were exceedingly common, yet there are no marshy grounds in the neighbourhood. At Neemuch, with an elevated position, a dry, gravelly, and rocky soil, fever was very prevalent. The same proneness to fever was observed when the regiment was stationed in Central India, where the position of stations is generally elevated, and where the soil, except in the valleys, is dry and gravelly. At Agra and in Gwalior fortress, during the hot weather, agues were the prevalent diseases; and the former station, though excessively hot, has no marshes in its vicinity, while the latter is situated on a rock rising upwards of 250 feet above the surrounding plain. At Umballa, in the Punjaub, the country is arid, flat, and sandy; but the climate is very hot, and in the warm season a large majority of the men suffered from ague.

The above are the principal stations in which the 89th Regiment has been quartered in India, and it is to be observed that none of them are marshy, or located near marshes; that, on the contrary, most of them are remarkable for their dryness, though varying in other respects both as to situation and as to climate. At all these stations, however, the summer heat is great, and in proportion to the greatness of heat is the frequency of fever. During the hottest months, fevers are most prevalent, and on the hottest days the largest number of admissions of fever takes place. Soldiers are well aware of this, and attribute their attacks to heat or to exposure to the sun. As the weather becomes cool, fevers become fewer and less severe, till in the winter months they nearly disappear. Even on the occurrence of the rains, fevers often become diminished in number and in severity, from the temporary cooling which the atmosphere then undergoes.

The composition of marsh poison has not yet been accurately determined; but whether it consist of carbonic acid, or of some other gas, or of several gases in combination, it must act on the

body in one or both of two ways,—either directly by its own deleterious properties, or indirectly by the conditions which it induces in the system giving rise to vitiation of the blood, or by both of these methods. Dr E. Smith has shown that, with a diminution of the vital powers, there is always a diminution in the excretion of carbonic acid, so that, whether paludal miasms consist of carbonic acid, or of some other gas whose influence on the frame is to lower its vitality, the result will be the same; in one case the carbonic acid itself entering the body from without, in the other its elimination being prevented from within.

If, then, this theory be correct, that marsh fevers are due to the accumulation of carbonic acid in the system, it is at once explained why great atmospheric heat should also give rise to these or similar forms of disease. It has likewise been already shown that heat apoplexy is probably entirely due to the non-elimination of carbonic acid from the system, so that a close connexion is thus established between marsh fever and heat apoplexy, and the explanation is rendered easy why the one malady should occasionally merge into the other.

In heat apoplexy, carbonic acid goes on accumulating in the blood till coma supervenes; whereas, in marsh fevers, reaction coming on, the noxious material, or a portion of it, is removed by the skin in the copious perspirations in which these fevers generally terminate. If in these fevers free perspiration were not to occur, and the other emunctories at the same time remain inactive, coma would supervene as certainly as it does in heat apoplexy. In this way, as has been already observed, agues and remittents do not infrequently carry off their victims. In periodic fevers, as soon as perspiration occurs, the system is for the time relieved, and comparative comfort, if not health, is restored. If, however, the vitality of the body be not immediately invigorated, the accumulation of carbonic acid in the blood again takes place, followed by another paroxysm of fever. Thus the disease becomes periodic, the non-elimination of a certain amount of carbonic acid being uniformly followed by the development of the same set of symptoms.

If the above views on the causes of heat apoplexy and of fevers be correct, the necessity of selecting for our troops in India the coolest, as well as the driest, and most elevated stations, becomes obvious. Of the men yearly invalided from India, by far the greater number owe the cause to fever or to its *sequelæ*, so that, on pecuniary and economical grounds alone, no pains should be spared in the choice of localities for military stations. When, for the safety of the country, it is absolutely necessary to keep troops in warm situations, then every means should be employed to obtain the healthiest and best position for the barracks, and to preserve them at all times cool, airy, and well ventilated. Crowding men together, especially at night, ought to be particularly avoided.

In the above description it has not been deemed necessary to

refer to cases of sudden death due to syncope. It sometimes happens on the line of march, that men who have been exposed to the sun and are worn out by fatigue, drop down dead on the road without uttering a word of complaint. These have sometimes been called cases of heat apoplexy ; but it appears probable that they are due to different causes from those of the disease described in this article. In describing the symptoms of heat apoplexy, death was shown to occur by way of coma, whereas, in the cases of sudden death now referred to, sudden failure of the heart's action occurs, and no other symptoms are apparent.

With respect to the treatment of heat apoplexy, the principal object to be kept in view is the re-establishment of the excreting functions. If the case be not very urgent, that is, if the patient be sensible and coma be not threatening, stimulants, as ammonia or brandy, in small quantities, may be administered. The affusion of cold water to the head and chest ought to be assiduously employed till the preternatural heat of the surface of the body has disappeared. Purgative enemata ought to be used, and free action of the bowels obtained as soon as possible. Diuretics and diaphoretics ought also to be prescribed. Chlorate of potash in water, or oxygenated water, may be employed as an ordinary drink, and the patient ought to be placed in a large room well supplied with pure and cool air. If the case be more advanced, and danger imminent, then not a minute is to be lost. The patient is to be at once removed into a large room, or, if the case occur at night, into the open air, where he ought to be stripped naked, and placed on his back on a cot, with his head slightly elevated. Cold water in a full stream is then to be poured from a height of about two feet on the head and chest. The extremities are at the same time to be well rubbed, and the arms may be alternately raised and depressed, as in the employment of artificial respiration. Enemata of cold water, or of salt and water, may be thrown up, and sinapisms applied over the epigastrium and abdomen. Small quantities of brandy are, from time to time, to be given, care being taken not to choke the patient, deglutition being slow and difficult. In the employment of the cold affusion, the following practice may be followed:—Let the stream of water fall for about half a minute on the head and chest, and then be interrupted for a few seconds, when it is to be again allowed to fall on the head and chest for an equal length of time as before, followed by a similar interval of cessation, and so on, till the surface of the body is reduced to the natural temperature. Care must be taken not to employ the cold affusion too long or too uninterruptedly, otherwise great depression will be produced by the cold, and recovery prevented. The patient is now to be well dried, put to bed, and lightly covered with bedclothes, the head being kept somewhat elevated. The effects of stimulants are to be watched, and they are to be continued, if necessary. If the heat of skin return, or if the head become hot, the cold affusion

must at once be had recourse to. These measures ought to be persevered in for a long time, for apparently hopeless cases sometimes recover. Amelioration is shown by the disappearance of stertor, and by deeper and more regular respiration. The immediately dangerous symptoms being got rid of, if the hair of the head has not been already removed, it ought now to be cut short, and a blister applied to the nape of the neck: action of the bowels ought to be solicited, and free perspiration encouraged. Venesection ought never to be practised. If reaction set in rather strongly, and headache be much complained of, a few leeches may be applied to the temples, or what is preferable, blisters may be applied to the back of the neck or to the sides of the head. Patients who recover require careful watching and attendance till all the functions of the different organs have been completely restored.

During convalescence the attention must be directed to the regulation of the secretions and excretions. For this purpose tonics and aperients will chiefly be required. The skin must be kept clean and warm, and bathing in tepid or cold water daily practised. The diet ought to be moderate in quantity, and consist of nourishing, non-heating, and easily digestible food. Every means to impart tone and vigour to the body should be employed. As soon as the patient can be removed, he ought, if possible, to be sent away from the locality in which he suffered the attack; and, in the majority of cases, a change to the climate of England will be requisite for the complete re-establishment of health.

Part Second.

REVIEWS.

A Practical Treatise on the Diseases and Infirmities of Advanced Life. By DANIEL MACLACHLAN, M.D., F.R.C.P., late Physician and Principal Medical Officer to Chelsea Hospital. London: Churchills: 1863.

A TREATISE on the diseases of old age has been long a desideratum in English medical literature. Though disease is essentially the same under all circumstances, its manifestations are remarkably modified by a variety of circumstances; of these none is more important than age; but while we have various works on the diseases of children, we have till now had no complete treatise on the diseases of advanced life. Dr Maclachlan has had very peculiar

advantages in preparing himself for the task he has undertaken. As senior medical officer of Chelsea Hospital, he had for twenty-three years under his charge upwards of five hundred aged people, most of them between sixty and ninety years of age. In this vast field of inquiry Dr Maclachlan assiduously laboured, and the results of his observation are recorded in the very excellent volume now before us.

The first part of the work is introductory, and treats of various points regarding the anatomy and physiology of advanced life, the diseases incident to it, and the principles on which their treatment is to be founded; and concludes with a chapter on climacteric disease or breaking up of the constitution. In the subjoined passage, Dr Maclachlan corrects the common error, that death from gradual decay, the result merely of old age, is of common occurrence.

"Death, as purely and simply the result of old age, is among the rarest of deaths—so rare that few persons have really witnessed it. I mean that kind of death occurring gradually and almost imperceptibly, without disease, pain, or suffering of any kind—life ebbing away through natural decay of the machine now holding it. I have certainly seen such deaths but seldom; and even then the post-mortem examination has generally revealed something which, with other causes, has made up the sum of exhaustion necessary to part life from its frail tenement. In extreme old age, or under the circumstances just mentioned, the sedative impression of cold, or its effects in producing congestion of the respiratory organs, the supervention of an exhausting disease, such as a slight diarrhoea, an attack of influenza, or a common cold, sometimes a low form of inflammation of one of the internal organs, or its investment, steps in to sever the cord, chafed and worn out by the lapse of years. . . . It cannot be denied that in advanced as at other periods of life, and perhaps then more frequently than earlier, death now and then occurs without any possible assignable cause, and without the most careful inspection detecting any anatomical change sufficient to account for it; but, during the last twenty years at least, hardly an instance of death by sheer old age has occurred among the inmates of Chelsea Hospital, though in that period upwards of 1300 have perished, whose average age was over seventy years; several were non-agenarians, and one had reached the age of 106."

This opinion is, we believe, sustained by all the best observers who have had much to do with the diseases of advanced life.

Dr Maclachlan's opinion of climacteric disease is, that it is rarely met with as an idiopathic or distinct affection, and he believes that in most cases where death is referred to this cause, some latent affection has existed, but has not been characterized by its ordinary symptoms, the most frequent being tubercular disease of the lungs, organic disease of the liver, or cancer of one or more of the internal organs. Granular degeneration of the kidneys, but without anasarca, seems to be pretty common among elderly people, and to be not unfrequently the cause of death.

The second part treats of the Diseases of the Nervous System, and contains much valuable matter. We would particularly direct attention to the chapters on apoplexy, and on cerebral softening, in the production of both of which conditions much stress is very pro-

perly laid on the very common existence of degeneration of the cerebral arteries.

The Diseases of the Respiratory Organs are next considered, and Dr MacLachlan makes the following statement as to the frequency of these affections among the aged,—

“The diseases of the respiratory organs are at all periods of life the most common to which man is liable. As age advances, some of them increase in frequency and fatality, while others progressively disappear. Among the former, bronchitis, and its common associate, asthma, are peculiarly prevalent. These two diseases carry off immense numbers of old people, and certain varieties of them almost exclusively appertain to old age. The deaths from pneumonia are enormous, and rapidly increase with age, so that in the more advanced periods very few recover who are seriously attacked by it. Tubercular consumption is partly replaced by these diseases as life advances; but it has already been shown that this disease is very far from unfrequent even in extreme old age, and there is no doubt that it is much more common in the aged than is generally supposed. Laryngitis also decreases in frequency with advancing years, though this disease is also far from uncommon in old people. When cancer attacks the lungs, it is very generally met with in advanced life. Hæmoptysis is comparatively rare. Pleurisy is less frequent than in middle life, but much more fatal; as, indeed, are all the diseases of this system of organs.”

Of all, pneumonia is perhaps the most important, from its great frequency and the large mortality which it occasions. Many cases come on in a very insidious manner, and as the aged seldom complain of difficulty of breathing, the existence of the affection is very apt to be overlooked. In the treatment of sthenic pneumonia, Dr MacLachlan has no hesitation in resorting to general bleeding, although it should generally be restricted to the first twenty-four or forty-eight hours of the disease; at a later period, however, cupping may be required. Tartar emetic cautiously administered is in many cases a valuable remedy, but its dose must be carefully regulated, otherwise it is very apt to produce in the aged severe or fatal depression. Calomel, administered until the constitutional action of the mercury is induced, Dr MacLachlan considers useful in the second stage of the disease, though he is not to be considered by any means as a very warm mercurialist. Blisters are considered to do much good, and may be applied much earlier than in the adult, as they occasion but little reaction. They must, however, be removed soon, otherwise the blistered surface is apt to become gangrenous.

The fourth part treats of Diseases of the Organs of Circulation, and from it we extract the following sensible remarks regarding the prognosis of valvular disease of the heart in the aged:—

“Although, as already mentioned, large numbers of old people are carried off by disease of the heart, still the prognosis is, upon the whole, more favourable in the aged than in the adult. We do not look for cure where the valves are changed in structure, the orifices dilated or contracted, or where the walls and cavities are altered; but organic disease of the heart in advanced life is almost always of slow growth, sometimes stationary, and many years often elapse ere it tells upon the system or affects particular organs. Old age brings

with it an amount of security which is not the lot of the young; and not unfrequently the lesions which in youth would be accompanied with continued suffering, are now, owing to their passive nature, the diminished activity of the organism, and a blunted susceptibility, less severe in their consequences. Simple enlargement of the heart, with or without disease of the aortic valves, or aorta itself, is not inconsistent with the prolongation of life to advanced old age. It would even be easy to adduce numerous instances of confirmed valvular disease, with hypertrophy and dilatation, generally speaking an unfavourable combination, in persons above fifty and sixty years of age, who survived many years, still enjoying life, and dying of some other affection. Dropsical symptoms from cardiac disease are usually regarded, and justly, as indicative of approaching dissolution. Old people, however, occasionally recover from them in their highest degree, and escape again and again for several years. As a general rule, obstructive valvular disease of either arterial orifice is less serious than regurgitant valvular disease."

The remainder of the work treats of the diseases of the digestive, biliary, and urinary organs; of diseases of the skin, and of constitutional, or blood diseases.

We regret, however, that we cannot follow Dr Maclachlan through these different branches of his subject; and we can only hope that our readers will be encouraged to consult the work for themselves, in which they may depend upon finding a large amount of valuable information regarding all the more important diseases of advanced life.

The Sixty-Second Report of the London Fever Hospital for the Year ending December 31st, 1863. London: 1864.

THE London Fever Hospital is one of the most important of the metropolitan charitable institutions. Whether we look to the advantage derived by the patients admitted for treatment, or to the good done by removing from crowded neighbourhoods foci of contagion, the benefits it confers on the community can scarcely be over-estimated. The report recently issued, the medical portion of which has been drawn up by Dr Murchison, contains much interesting matter. It appears that the epidemic of typhus, which began in December 1861, still continues. The total number of patients admitted into the Hospital during 1863 was 2110. This number was 589 less than that for the year immediately preceding; but, with this exception, exceeded the largest number admitted in any previous year of the Hospital's history by 349. Of these 2110 patients, 1841 were suffering from fever in the strict sense of the term, the forms of disease being distributed in the following manner:—Typhus Fever, 1319; Enteric Fever, 172; Simple Fever or Febricula, 44; Scarlet Fever, 268; Small-pox, 25; Measles, 13. It will thus be seen that the large number of patients admitted during the year depended upon the unusual prevalence of Typhus and Scarlet Fever. Typhus is essentially an epidemic

disease, the numbers varying greatly from year to year: thus, while in 1858 the number of cases admitted was only 15, it rose in 1862 to as high as 1827. Enteric Fever, on the other hand, is essentially endemic, the number of cases ranging between comparatively narrow limits. During the last sixteen years, the annual number of cases has never exceeded 234, and, with a single exception, has not been less than 137.

Though the total number of patients admitted into the Fever Hospital has been large, it is satisfactory to know that the mortality in the case of typhus and enteric fever has been unusually low. Although the proportion of aged patients in the London Fever Hospital is high, the mortality from typhus fever during the past year was only 16·02 per cent.; but if we deduct 23 cases fatal within twenty-four hours, and 28 other cases fatal within forty-eight hours of admission, the mortality is reduced to 12·5 per cent. The mortality of the cases of enteric fever was 14·2 per cent.; or, deducting 1 case fatal within twenty-four hours, and 2 others, fatal within forty-eight hours of admission, it was only 12·65 per cent. On the other hand, the mortality from scarlet fever has been unusually large. Out of 257 cases, 41 were fatal, or the mortality was 15·95 per cent. But 10 of these cases died within twenty-four hours of admission, and 7 others within forty-eight hours. Deducting these 17 cases, the mortality is reduced to 10 per cent.

The most interesting portion of the report is that which refers to the comparative advantages of distributing cases of fever among the wards of general hospitals, or of treating them in separate fever wards or fever hospitals; and to the propriety of classifying patients suffering from the different forms of fever. We quote Dr Murchison's remarks at length.

"The number of cases of fever, contracted in the Hospital during 1863, was considerably less than in the year preceding. Out of 92 attendants on the sick (including laundry-women), either permanent, or engaged at different times during the year, 22 caught typhus, viz.:—the resident medical officer and 3 gentlemen who acted as his assistants, the head laundress, 16 nurses, and 1 scrubber. Of the patients, 4 contracted typhus, and 2 scarlet fever. Of the 28 persons who caught fever in the Hospital, 23 recovered, but 5 nurses died of typhus.

"The above facts might seem to lend some support to the views of certain sanitary reformers, who maintain that all cases of infectious disease ought to be distributed through the wards of general Hospitals, and who have denounced the Fever Hospital as a crime against humanity, and a disgrace to the age in which we live. It is expedient, therefore, to make known the real facts of the case. The objections urged against Fever Hospitals are two, viz.:—1. That the concentration of the poison increases the mortality among the patients themselves; and, 2., That the concentration of the poison increases the danger to the attendants. The validity of these objections may be tested by comparing the results of the London Fever Hospital with those of six of the principal general hospitals of the metropolis.

"During the first six months of 1862, 1107 cases of true typhus were under treatment in the London Fever Hospital, of which 232 died, or the mortality was 20·95 per cent. In the same period, 343 cases of typhus were under

treatment in six of the general hospitals in London (St Bartholomew's, Guy's, St Thomas's, Middlesex, St Mary's, and the German Hospital), of which number 80 died, or 23·32 per cent. The 1080 (1107-27) cases admitted into the Fever Hospital communicated the disease to 27 persons, of whom 8 died. In other words, only one person took the fever for every 40 admitted, and only one died for every 135. But the 272 cases admitted into the six general hospitals communicated the disease to 71 persons, of whom 21 died; or one person caught the fever for every 3·8 cases admitted, and one life was lost for every 12·9 cases admitted. It appears from this, that the objections raised against a Fever Hospital with thorough ventilation, however plausible in the theory, are not justified by facts, and that a given number of typhus patients can be treated on the plan of isolation, with equal advantage to themselves, and with far less danger to the attendants and other patients, than in the wards of a general hospital. It may fairly be asked, what would have been the effect if there had been no Fever Hospital in London, and if the 3146 cases of contagious typhus admitted into it during the last two years had been distributed through the general hospitals, in addition to the few hundreds actually treated in them? It may be mentioned, that since the above comparison was made, typhus fever has spread to an alarming extent in four at least of the general hospitals of the metropolis, immediately after the admission of two or three cases.

"It was formerly the custom to make no separation between the patients suffering from different diseases admitted into the Hospital, but owing to the frequency with which patients contracted other diseases than those for which they were admitted, the plan has been adopted of isolating in separate wards the typhus and scarlatina patients from the other patients, and from one another. The result has been most satisfactory. Instances are now extremely rare of patients contracting either typhus or scarlet fever; it is a remarkable fact, that out of 659 patients, admitted into the Hospital during the last two years, suffering from acute diseases of a local nature, only 4 have been seized with typhus or scarlet fever in the institution."

Of the correctness of these remarks we feel thoroughly satisfied. When cases of typhus fever are admitted into general hospitals, it is all but impossible to prevent the disease from spreading. The experiment was at one time performed on a pretty large scale in the Royal Infirmary of Edinburgh, but has now been almost entirely abandoned, in consequence of the numerous cases in which the disease was communicated to others. With enteric fever it is different. Here the contagious property is very limited, and is probably in great part confined to the fecal evacuations; those suffering from it may therefore, if due attention be paid to cleanliness, be mixed without danger among patients suffering from non-febrile diseases. Indeed this is far better than sending such patients, as is generally done, into fever wards, where they are exposed to the contagion of typhus fever; and experience has shown that they contract that disease in large proportion. This has been the case in Edinburgh during the past winter to such an extent, that the Managers of the Royal Infirmary, on the suggestion of the Ordinary Physicians, have directed that the patients suffering from typhus fever shall be separated from those affected with enteric; and that the latter shall either be treated in special wards, or shall be scattered through the general wards of the institution.

The Prescriber's Companion. By ALFRED MEADOWS, M.D., M.R.C.P., etc. etc. London: Renshaw: 1864.

Notes on the British Pharmacopœia. By A. F. HASELDEN, Pharmaceutical Chemist. London: Hardwicke: 1864.

WHATEVER be the shortcomings of the British Pharmacopœia, they will be abundantly made up for by supplementary works. Though perhaps beneath the dignity of such a work as that issued by the General Medical Council, a few remarks on the actions, uses, and doses of the different medicines would have rendered it more acceptable to the profession. As the compilers did not think it right to deviate from the abstract idea of what a Pharmacopœia should be, others have come forward to supply a widely-felt want.

Dr Meadows, in the "Prescriber's Companion," arranges the different remedies according to the classification of Dr Pereira; they are accordingly distributed under the different heads of remedies for external application; medicines which act upon the blood; medicines which act upon the nervous system; medicines which affect the secreting system; medicines which act upon the generative system; and substances which are useful as disinfectants. Each of these classes is again subdivided into a variety of secondary groups. A simply alphabetical arrangement would, we think, have been preferable; still, a well-prepared index will prevent the prescriber from experiencing any difficulty in at once hitting upon the subject to which he wishes to refer. Additional value has been given to the work by the introduction of notices of a variety of substances which, though not admitted into the national Pharmacopœia, are extensively employed. We can recommend the "Prescriber's Companion" as a carefully-prepared and useful little volume.

Mr Haselden's "Notes" are intended for the Pharmacist rather than for the Prescriber. We have, in the first place, lists of the substances and preparations which have been added to or omitted from the Pharmacopœia, with notices of changes which have been effected in the former nomenclature. This introduction is followed by the "Notes on the British Pharmacopœia," which consist of a series of remarks on the different formulæ, pointing out the respects in which the present differ from former preparations bearing the same name; occasionally pointing out errors or suggesting improvements. The work is strictly supplementary to the Pharmacopœia, and will doubtless be found a useful addition to it.

Excision of the Scapula. By JAMES SYME, F.R.S.E., Professor of Clinical Surgery in the University of Edinburgh, etc., etc. Edinburgh: Edmonston and Douglas: 1864.

THE size of this work is not to be taken as a criterion of its value. Like all Mr Syme's writings it is characterized by brevity, clear-

ness, and adherence to sound principle. A procedure of great importance is described; and surgery, which already owes so much to Mr Syme, will be indebted to him for having introduced the operation of excision of the scapula. Three cases are recorded, the mere detail of which is amply sufficient to establish the following propositions:—

“1st, That the entire scapula, either alone, or together with the arm, may be removed without much difficulty or loss of blood;

2d, That the wound thus inflicted may heal quickly and soundly;

3d, That the arm, if preserved, may be strong and useful.”

The operation, at first sight, seems a very formidable one; but Mr Syme's cases clearly demonstrate its practicability and the success which follows it; and we have no doubt that “excision of the scapula will be recognised as a legitimate and established procedure of surgery.”

On the Diseases of Women. By FLEETWOOD CHURCHILL, M.D., M.R.I.A., etc., etc. Fifth Edition. Dublin: Fannin & Co.: 1864.

A WORK which has reached a fifth edition is beyond the sphere of criticism; while the merits of Dr Churchill's work on the diseases of women are so well known as to render encomium unnecessary. We may merely state that much important matter has been added to this edition, and that the text is illustrated by a number of new drawings.

Part Third.

PERISCOPE.

REPORT ON PHYSIOLOGY.

BY W. GILCHRIST, M.D., TORQUAY.

THE NERVOUS SYSTEM.

EXPERIMENTAL RESEARCHES ON THE VASCULAR AND CALORIFIC NERVES OF THE GREAT SYMPATHETIC. BY CLAUDE BERNARD.

(Communicated to the Academy of Sciences, August and September 1862.)

It will be remembered that in 1851, C. Bernard discovered that section of the sympathetic nerve is followed by increased heat.¹ The *first* part of these researches is devoted to the determination of the distinction of the vascular and calorific nerves from the ordinary motor nerves. It is shown that in the posterior limb of the dog the vascular or calorific nerves do not originate in the spinal cord along with the sensitive and ordinary motor nerves, but that

¹ Comptes Rendus, t. xxxiv. p. 472.

they are contained in the abdominal trunk of the sympathetic, and become mixed with the ordinary motor and sensitive nerves in the lumbo-sacral plexus. By division of the abdominal sympathetic, the temperature of the limb on that side was raised from 5° to 8° . The same effect is produced in the upper extremity by laceration or destruction of the first thoracic and last cervical ganglia. Galvanization of the first thoracic ganglion produced extreme contraction in the vessels of the anterior limb.

The *second* part of Bernard's recent researches is directed to the sub-maxillary ganglion. This ganglion is situated on the course of the lingual nerve just where the chorda tympani goes off to join the sub-maxillary gland. With the latter nerve it gives branches to the gland. Bernard endeavoured to determine whether reflex actions through this ganglion from the tongue to the gland could occur without the intervention of the brain. He found that when all connexion with the latter organ was cut off, by section of the tympanico-lingual trunk, excitation of the lingual nerve by galvanism, pinching, etc., produced a copious secretion of saliva, during which the venous blood of the gland was seen to become more abundant, its colour to become brighter, and its temperature greater. From such experiments Bernard concludes that the tongue is related to the sub-maxillary gland by two kinds of nervous arcs—one through the brain, the other through the sub-maxillary ganglion. To these two nervous tracts two sorts of reflex influence correspond—one conscious, and originating in the gustatory sense, passes through the brain; the other, unconscious, passes through the sub-maxillary ganglion, and is excited by varying conditions of moisture on the bucco-lingual mucous membrane. The next observation of Bernard is very interesting. He found that when the tympanico-lingual trunk had been divided some weeks, the flow of saliva became continuous, whilst galvanic excitation of the branches of the lingual produced no secretion. Whilst by separation from the cerebro-spinal centre the ganglion would seem to lose its functions, yet the secretion of the gland is continuous!

The *third* series of Bernard's researches relate to the oculo-pupillary phenomena produced by section of the cervical sympathetic. The phenomena consequent on this operation are,—1. Increase of heat and vascularization with increase of sensibility; 2. Contraction of the pupil; 3. Retraction of the ball of the eye into the orbit; 4. Flattening of the cornea. The effects of galvanization are, dilatation of the pupil, enlargement of the palpebral opening and projection of the eye (exophthalmos), contraction of the bloodvessels, and diminution or abolition of sensibility. The origin of these oculo-pupillary nerves lies (in the dog) in the anterior roots of the first two dorsal nerves, and rarely also in the third. By section of these roots all the ocular phenomena above mentioned are observed—so with galvanization. This part of the cord ought rather to be termed *oculo-spinal* than *cilio-spinal*. But although section of the two first dorsal nerves produces the *ocular* part of the phenomena following section of the cervical sympathetic, the *vascular* and *calorific* effects of the latter operation are not produced. These, however, may be readily obtained by dividing the ascending filament of the sympathetic between the second and third ribs. This operation performed alone does not give rise to the oculo-pupillary phenomena, but was followed by increase of the temperature of the head on that side to the extent (on the day after) of 6° .

Reflex movements of the eyes may be produced through any sensitive nerve in the body; and where the roots have been cut on one side ocular reflex phenomena may be excited on the other from any point on the body.

Reflex actions of the vaso-motor nerves are manifested by contraction of the vessels followed by dilatation. Vascular reflex actions are not crossed, but occur on that side only to which the excitation is applied. If the auricular nerve is cut, the excitation produces considerable calorification in the ear of that side; but this is reflex and transient in its character, and not due to section of vaso-motor fibres. Have the oculo-pupillary reflex actions their centre of

reflection in the spinal cord, and those of the vessels in the sympathetic ganglia? At all events, it would appear from these researches that the vaso-motor nerves are physiologically distinct throughout the organism.—*Journal de Physiologie*, July 1862.

ON THE PULMONARY LESIONS RESULTING FROM SECTION OF THE PNEUMOGASTRIC NERVES. BY R. BODDAERT.

The following are the author's conclusions. In mammals, section of the pneumogastric nerves in the cervical region produces various effects on the respiratory apparatus, some of which can be referred to paralysis of the inferior laryngeal nerves, others to paralysis of the pulmonary branches.

To these two effects correspond two orders of pulmonary lesion,—the inflammatory phenomena observed in some kinds of animals are due to the presence of foreign matters in the air-passages, consequent on paralysis of the larynx; the emphysema, hyperemia, and their consequences, are due to the magnitude and fewness of respirations consecutive on paralysis of the pulmonary branches.

As a secondary cause of the first series of alterations, we must mention paralysis of the œsophagus; as secondary causes of the second series of lesions, may be mentioned the modifications of the heart's action, and the blood coagula formed in the divisions of the pulmonary artery. A section of one pneumogastric nerve has no influence on the anatomical condition of the lungs, because it does not excite the physiological disturbances of which we have spoken.—*Journal de Physiologie*, October 1862.

PHYSIOLOGICAL RESEARCHES ON THE MOTOR NERVES OF THE BLADDER. BY J. GIANNUZZI.

The author draws the following conclusions from his researches:—

1st, That there are two different nerves to the bladder: the one set coming from the spinal cord go directly to constitute the hypogastric plexus, in order to distribute themselves to the bladder; the other set, which originates likewise in the spinal cord, traverse the great sympathetic and mesenteric ganglia before going to the hypogastric plexus.

2d, That the difference which one observes between the excitation of these two sets of nerves does not consist in the form or the place of contraction, but rather in its intensity and rapidity; for, whilst the nerves which go direct to the bladder produce a rapid and energetic contraction, those which pass through the sympathetic ganglia produce a slow and feeble action, and require to be strongly excited.

3d, That, in irritating any part of the lumbar region, we produce in some animals contraction of the bladder.

4th, That in all cases there are in this region two principal centres, which preside over the contractions of the bladder; one of these corresponds to the third, the other to the fifth lumbar vertebra.

5th, That the point corresponding to the third vertebra transmits its influence by the fibres which transverse the mesenteric ganglia, so that, after division of these fibres, irritations at this point do not give rise to contractions of the bladder.

6th, That the point of the spinal cord corresponding to the fifth vertebra transmits its action through the fibres which go directly to form the hypogastric plexus.

These researches were made in Bernard's laboratory.—*Journal de Physiologie*, January 1863.

RESEARCHES ON THE FUNCTIONAL NATURE OF THE ROOTS OF THE PNEUMOGASTRIC NERVE AND OF THE SPINAL CORD. BY E. M. VAN KEMPEN.

Van Kempen's experiments prove,—

1st, That the roots of the pneumogastric nerve contain the motory fibres which preside over the movements of the constrictor muscles of the pharynx, muscles of the larynx, and the muscular coat of the œsophagus.

2d, That the roots of the spinal nerve, on the contrary, contain sensitive and motory fibres, which preside over the movements of the muscles of the shoulder, to which the external branch of this nerve is distributed.

3d, That these results are the same as those which Van Kempen obtained in 1842 by the application of electricity to the roots of these nerves; that, consequently, these effects are not attributable to derivation of the electric current, as they may be produced by other irritants, such as pinching, cutting, etc.

These conclusions are at variance with those of Longet, but seem to be based on rigorous observation.—*Journal de Physiologie*, April 1863.

THE INFLUENCE OF THE NERVES OF THE HEART ON THE FREQUENCY OF ITS PULSATIONS. BY J. MOLESCHOTT.

(*Wiener Medicinische Wochenschrifte*, Mai 1861.)

The heart has four motor nerves, which are very excitable, and which super-excitation very easily exhausts. These nerves are the two vagi and the two sympathetic nerves. These four nerves are united into a community of action by means of the ganglia of the heart, so that the condition of the excitation and super-excitation of one of the nerves is communicated to the other three. But it is impossible to exhaust in a lasting manner the three other nerves by the isolated super-excitation of one only of these nerves; for the excitations, which would be strong enough to produce this result, would have soon exhausted all the vitality of this nerve, and, consequently, any action which might have been communicated by its means to the other three would be destroyed.—*Journal de Physiologie*, January 1862.

ON THE ACTION OF THE VAGI AND THE GREAT SYMPATHETIC ON THE HEART. BY A. VON BEZOLD.

Von Bezold was induced to test experimentally the conclusions of Moleschott mentioned in the preceding notice, and, from many experiments on frogs and rabbits, he was led to very different results. Thus he found that no galvanic excitation, however strong or slight, applied to the vagi, produced acceleration of the cardiac pulsations; but, on the contrary, when any action followed, this consisted in retardation or arrest of these pulsations.

Bezold is of opinion, in opposition to Schiff and Moleschott, and in accordance with Pfüger and others, that the vagus belongs to the class of controlling nerves. In regard to the sympathetic, Bezold has never found, with Moleschott, that a slight irritation of this nerve accelerates, and that a stronger irritation reduces, the frequency of the pulsations.—*Archiv für Anat. u. Physiol.*, 1862, Heft i.

REMARKS ON THE ACTION OF THE VAGUS NERVE ON THE HEART. BY DR BROWN SÉQUARD.

The author was led to test experimentally the observations of Moleschott and Bezold, and his conclusions are,—

1st, After section of the vagus nerve, the application of interrupted currents to its peripheral extremity never produces an augmentation of frequency or of force in the movements of the heart, whatever be the degree of the intensity of the current.

2d, It is necessary to observe that any movement suffices to increase the frequency of the cardiac pulsation, whether the nerves are cut or not. Under these circumstances, one may see, as Moleschott did, that the heart beats more quickly on the application of a weak current; but it may be easily ascertained that this is due to the agitation of the animal.

3d, Moleschott denies that the heart beats more quickly after section of the vagi. There is in physiology no fact more certain or more easily ascertained than that which he denies.

4th, The theory of Moleschott is certainly in opposition to a number of facts. As to the theory of nerves of arrest or control, it is in no way necessary to explain the facts known in regard to the heart and intestine, etc., for several

other hypotheses, more simple than this theory, and not requiring, as it does, the invention of a new principle, may, as we shall soon show, explain all the known facts.—*Journal de Physiologie*.

LECTURE ON THE PHYSIOLOGY OF THE CEREBELLUM. BY DR P. LUSANNA.

Directing attention to two experiments on birds, in which the usual appearances of irregular and disordered motions were manifested on injuring their cerebella, the author commences his lecture by citing the opinion of Flourens, that co-ordination of the voluntary movements is the function of this organ. Clinical observation on man has not favoured this view: paralysis or powerlessness of voluntary movement, rather than disorder, characterizes lesions of the cerebellum. In a turkey, which Lusanna had succeeded in preserving some months after removal of the cerebellum, this powerless condition of the motor faculties was very manifest. At first, in this turkey, for several days disordered and irregular movements were present, but these gradually gave place to paralysis. Patients complain of being unable to feel the ground below their feet, but their movements are not really paralyzed. Lusanna believes that the cause of these symptoms is *the loss of the muscular sense*, which co-ordinates voluntary movements. This sense differs from cutaneous sensibility in its anatomy, by its central organs, by its peripheral apparatus, and by its nerves. In its absence, an animal no longer feels the solidity of the earth on which it stands; it does not feel the resistance of the medium in which it flies or swims; it no longer feels the impenetrability of objects which oppose its progress, nor the weight of any body it attempts to seize or carry.

In man, diseases of the cerebellum usually give rise to hemiplegia of the opposite side of the body, most marked in the inferior extremity. In animals, the peculiar rotatory movements are disordered efforts at movement, but are nevertheless always voluntarily executed. (!) In birds, the disordered movements are bilateral or general; in mammals, they are unilateral. In the former, the cerebellum is one single mass superimposed on the medulla oblongata, and there is in it no decussation of its crura; in the latter, there are two lateral and a central lobe, and the posterior crura decussate. There is a correspondence in all classes of animals between the perfection of muscular sense and the development of the cerebellum. Lusanna is further of opinion that the cerebellum is the organ of the erotic sense, and that the middle lobe is the special seat of this function.—*Journal de Physiologie*, 1862.

Further Observations.—In reply to some critical remarks of Dr Brown-Séquard on the above paper, Lusanna adduces further proof of the correctness of his theory that the cerebellum is the organ of the muscular sense. He affirms that in 128 recorded cases of affection of the cerebellum, there is not one in which the symptoms were not those which characterize a lesion of the muscular sense, expressed, not by a state of irritation, but by want of action. If one such case, well observed, in which a *considerable* lesion of the cerebellum is not accompanied by lesion of the voluntary movements in some part of the body, can be adduced, Lusanna is willing to give up his theory. In the case of Schroeder van der Kolk, cited by Brown-Séquard, in which, after a wound of the cerebellum, the patient could walk or mount a ladder, there is no proof of any considerable destruction of the organ, and the symptoms would rather be those of irritation than of absence. A wound of the brain does not annihilate intelligence, yet no one asserts that the brain is not the organ of the intellect. If an animal, which has survived the removal of the cerebellum, does not exhibit signs of the loss of the muscular sense, the author is willing to abandon his theory. Experiments on fishes confirm what the author has observed in warmblooded vertebrata. When vomiting, irregularity of the circulation, syncope, and convulsions occur, they indicate injury of the medulla oblongata, and are usually of fatal import. On the other hand, lesions of motility are by all experimenters regarded as characteristic of injury of the cerebellum.—*Journal de Physiologie*, April 1863.

Part Fourth.

MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XLIII.—MEETING V.

Wednesday, 23d March 1864.—Dr DOUGLAS MACLAGAN, President of the Society, in the Chair.

I. EXCISION OF HEAD OF FEMUR.

Dr Gillespie exhibited the head of a femur, excised for scrofulous disease of the hip-joint, in a very strumous girl of 19. The disease had existed for some years, and the patient was much exhausted, suffering intense pain from the head of the bone having escaped to the dorsum of the ilium. The neck of the bone would be observed to be shortened, and the head diminished in size, while there were two sequestra lying in cavities, one at the inner, the other at the upper and back part of the head. The patient lived for nine days, dying ultimately of acute necrosis of the entire shaft, which had supervened.

II. ENCHONDROMATOUS TUMOUR OF THE RADIUS.

Dr P. H. Watson showed a cast of the hand and fore-arm of a lad, in which a tumour occupied the lower end of the radius. The tumour had developed slowly, and implicated only the flexor aspect of the bone. Over its surface the radial artery could be traced, while the flexor carpi radialis and palmaris longus tendons channelled its anterior aspect. The tumour was about the size of an orange, somewhat botryoidal, and presented the characters of enchondroma. In these circumstances, *Dr Watson* effected its removal, along with the mere osseous surface from which it grew, by means of a narrow saw. On examining the cut surface, it would be observed that it consisted of perfectly healthy osseous structure.

III. EXCISION OF THE KNEE-JOINT.

Dr P. H. Watson showed the articulating surfaces of the femur and tibia, which he had recently removed, by excision of the knee-joint, in the case of a female adult.

IV. AMPUTATION ON ACCOUNT OF MALIGNANT DISEASE.

Dr P. H. Watson showed the lower extremity of a middle-aged female, which he had to-day removed by amputation at the trochanters. About a year ago, the patient from whom this specimen had been obtained began to suffer from symptoms referable to chronic rheumatic arthritis. Under the usual treatment, these symptoms subsided in a great degree. She again, however, began to suffer from a fresh access of the old symptoms towards the end of last year. At that period, the symptoms were, however, more severe than on the former occasion. The actual cautery was then applied, with, however, but slight effect. The gnawing pain still continued, the sleepless nights were unrelieved, and the symptoms were now almost entirely referred to the inner condyle of the femur and the head of the tibia. Since then, until a month ago, the symptoms underwent little change. The enlargement on the inner side of the joint then, however, began rapidly to increase, developing the characters of medullary disease.

The amputation was performed at the trochanters, instead of at the hip-joint, because the disease commenced in, and was confined to, the articulating

extremity of the bone, thus rendering improbable the existence of cancerous disease in the neck of the bone. In operating, the abdominal aorta compress was employed, with satisfactory control over the hæmorrhage.

V. MEDICAL EDUCATION.

Dr Andrew Wood read a paper on this subject, which appeared in the April number of this Journal.

MEETING VI.

Wednesday, 6th April 1864.—*Dr DOUGLAS MACLAGAN*, President of the Society, in the Chair.

I. AMYLOID DISEASE OF THE LIVER.

Dr Grainger Stewart exhibited a peculiar form of amyloid or waxy degeneration of the liver. The specimens were derived from the body of a man who had constitutional syphilis, and whose case had been published by *Dr Grainger Stewart* as one of amyloid degeneration several years before. The kidneys and small intestine, besides the liver, presented the degeneration.

The peculiarity was, that the degeneration affected mainly the vessels, and the secreting cells only in certain parts. In these parts, however, it was complete, they being transformed into white, wax-like nodules. Of these there were many (forty or fifty) scattered throughout the liver. On microscopic examination, the cells were found to present the peculiar transparency and the reactions with iodine characteristic of the disease. In some of the masses, bands of fibrous tissue existed which did not present any reaction; and it seemed that this was a later development, and led to or was associated with the atrophy of the degenerated cells.

Some of the masses lay on the substance of the organ, others near the surface. Over the latter there were always distinct depressions, presenting much the appearance of ordinary syphilitic cicatrices. The reaction of iodine was distinctly shown to the Society in, and confined to, these masses.

II. ANEURISM OF THE AORTA.

Dr Stewart also showed an aneurism at the origin of the innominate artery. The patient from whose body the aneurism had been removed was, in December last, under *Dr Laycock's* care for scabies; but, while under treatment, he became very drowsy and almost unconscious, but soon recovered, particularly under peripheral stimulants. About the third week of March, he was re-admitted, with a return of his drowsiness, and with embarrassed respiration, a husky voice, and little power of coughing, associated with a distinct aneurismal tumour at the right supra-sternal notch. The symptoms gradually increased till death. The preparation showed the heart, the aorta, and its branches in the thorax. The pericardium was adherent throughout its whole extent, the adhesions moderately firm and not very recent. The heart was hypertrophied and coated with fat; some fatty encroachment had taken place. The substance was in some parts in a state of fatty degeneration. The left phrenic nerve was included in the adhesions about the pericardium. The cavities were dilated. The valves were natural. The aortic walls were thickened, but very irregularly, from the different degrees of atheroma which the inner coat presented at different parts. This process was seen in all its stages, from simple sclerosis to the open ulcerated condition. The aorta was dilated. About an inch from its origin, on its outer and anterior surface, there were two small aneurisms, which in appearance and to the touch resembled a wen. They had distinct orifices, each about the size of a crowquill, and did not communicate with one another, but the smaller was enveloped as it were in the wall of the larger. They contained some layers of firm clot; the smaller was about the size of a large cherry-stone, the larger of half a walnut. At the arch about the origin of the innominate artery there was an orifice about half-an-inch long by one-third broad;

it reached within a line of the origin of the left carotid. This led into the main aneurism, which was about the size of a goose's egg, and contained no clot; on its posterior wall was seen the opening of the innominate artery, the whole extent of that artery, and a little of the right common carotid and subclavian, which were much flattened; besides a portion of the trachea, with two of its cartilages laid bare by ulceration. No perforation had taken place. There was a good deal of inflammatory thickening round the sac, and in this were included the right phrenic, pneumogastric, with its recurrent laryngeal branch, and sympathetic nerves; the innominate vein much compressed and flattened as it coursed over the aneurism. There was a distinct pressure upon the trachea, and in part on the œsophagus. At one point in the former, ulceration of the mucous membrane had been established, and had in part laid bare two rings; and in the latter there was a distinct point of rosy congestion. Thus, as had been anticipated by Dr Laycock, there was direct pressure on the trachea; pressure on the phrenic, preventing the act of coughing; on the recurrent laryngeal, impairing the voice; and on the veins hindering the return of blood from the head.

III. ENDO-PERICARDITIS.

Dr Stewart also exhibited a specimen obtained from the body of a girl aged 18, who had died in the Royal Infirmary. Both layers of the pericardium were congested and coated with lymph. The sac had contained about 16 ounces of fluid. The heart was hypertrophied. The aortic valves were thickened and sacculated at their base. On the fibrous expanse, between the aorta and the mitral valve, there was a mass of vegetations of the size of a small walnut. At the base of the corresponding segment of the aortic valve there were two perforations, through which a probe could be passed through the vegetations into the ventricle. It was conceived that an aneurism had first been formed at the base of the valve, and the vegetations had formed on its surface, that the thin wall had given way, and so the aneurism become incomplete. At a point on the other side of the ventricle opposite the extremity of the mass of vegetation there were some minute fibrinous deposits on the surface. The whole of this disease must have developed within three weeks before death, for the heart-sounds were healthy up to that time, and then a systolic blowing, loudest at the base, became audible. There must have been great obstruction to the flow of blood from the ventricle; but there was no interference with the current through the mitral orifice. There was one fibrous mass in the spleen, a result of embolism. The central part of the mass had become decolorized; the margins were still red. No other important lesion had existed in the case.

IV. TUBERCULAR LEPROSY IN THE ISLAND OF MADAGASCAR.

Dr Warburton Begbie communicated, on the part of Dr Andrew Davidson of Antananarivo, a paper on this subject, which will appear in an early number of this Journal.

DR STARK'S PROPOSED NEW CLASSIFICATION OF DISEASES FOR STATISTICAL PURPOSES.

NEW SCOTTISH CLASSIFICATION.

Rule I.—The causes of death must be only entered once in the classification.

Rule II.—The diseases must be classified according to the primary cause or affection which led to the death.

Rule III.—So far as practicable, every disease causing death must be tabulated under the organ of the body which was primarily and chiefly affected.

CLASS I.—*Fevers.*

Ague
Remittent — Yellow
Fever
Typhus — all varieties
and infantile
Smallpox
Measles
Scarlatina
Diphtheria.

CLASS II.—*Diseases of Brain, etc.*

Hydrocephalus
Cephalitis
Apoplexy
Paralysis
Chorea
Epilepsy
Tetanus
Insanity
Convulsions
Brain diseases — in-
definite.

CLASS III.—*Diseases of Heart and Organs of Circulation.*

Pericarditis
Aneurism
Disease of Heart, etc.

CLASS IV.—*Diseases of Organs of Respiration.*

Phthisis
Hooping-cough
Croup
Laryngitis
Bronchitis
Influenza
Pleurisy
Pneumonia
Asthma
Disease of Lungs (in-
definite).

CLASS V.—*Diseases of Organs of Digestion.*

Thrush
Diarrhœa
Dysentery
Cholera
Teething
Quinsey
Gastritis

Enteritis
Peritonitis
Ascites
Ulceration of Intestinal
Canal
Hernia
Worms
Ileus
Intussusception
Tabes Mesenterica
Stricture of Intestinal
Canal
Disease of Stomach
Disease of Pancreas
Hepatitis
Jaundice
Disease of Liver
Disease of Spleen.

CLASS VI.—*Diseases of Urinary Organs.*

Nephritis
Nephria
Ischuria
Diabetes
Stone
Cystitis
Stricture of Urethra
Disease of Kidney (not
defined).

CLASS VII.—*Diseases of Organs of Generation.*

Paramenia, etc.
Ovarian Dropsy
Childbirth
Metria
Disease of Uterus and
other Organs
Syphilitic Diseases.

CLASS VIII.—*Diseases of Organs of Locomotion.*

Arthritis
Diseases of Joints, Bones,
etc.

CLASS IX.—*Diseases of Skin and Cellular Tissue.*

Carbuncle (incl. Boil)
Phlegmon
Abscess (not scrofulous)
Erysipelas
Noma
Ulcer
Diseases of Skin.

CLASS X.—*Diseases of Uncertain Seat.*

Hæmorrhage
Dropsy
Fistula (all kinds)
Mortification
Cancer
Purpura, Scurvy
Scrofula
Gout
Rheumatism
Atrophy.

CLASS XI.—*Malformations.*

Spina-bifida
Cyanosis
Other malformations.

CLASS XII.—*Debility at Birth and Premature Birth.*CLASS XIII.—*Old Age, no disease specified.*CLASS XIV.—*Sudden Deaths, cause not ascertained.*CLASS XV.—*Violent or Unnatural Deaths.*

Poison (taken into
Stomach)
Poisoned Bites, Wounds,
Stings
Hydrophobia
Intemperance (Alcoholic
Poisoning)
Delirium Tremens
Starvation
Want of Breast-milk
Neglect
Cold
Burns and Scalds
Hanging
Suffocation
Drowning
Fractures and Contu-
sions
Wounds
Other violent causes.

CLASS XVI.—*Causes not Specified.*

REMARKS.

The statistical classification of diseases adopted a few years ago in the English Registrar-general's reports has proved a failure, as I anticipated (see my remarks regarding it in the *Edinburgh Medical Journal* for June 1860), and already calls loudly for amendment. A movement is therefore being made to amend that classification. But as I am fully persuaded that that classification, from being drawn up on no fixed principles, is unimprovable, I venture to offer one which I know from experience will be easily workable, which panders to no medical theory which may be popular to-day and be refuted to-morrow; but is a classification drawn up on fixed, intelligible principles, which can be understood by the mass of mankind, as well as by the medical profession.

As we now have acts for the registration of births, deaths, and marriages in England, Scotland, and Ireland, and as the army and navy boards also publish statistics of deaths, it is extremely desirable that all should adopt the same classification. At the present moment, three classifications are in use, because the one now used by the Registrar-general of England will not answer for all purposes. For statistical purposes, however, all should follow the same classification; and when once a good and intelligible classification is adopted, no change should hereafter be made on it, otherwise all accurate comparison with the results of previous years is lost, and endless confusion generated.

As great misapprehensions exist regarding the difference between a *scientific nosology* and a *statistical classification of deaths*,—most persons imagining them to be the same,—a word of explanation seems requisite.

A *scientific nosology* being a purely theoretical classification of diseases, takes it for granted that every disease is with certainty recognised, and can be referred to its exact class and species. Hence, in such a nosology, every disease is arranged under its *primary affection*, and not under the *secondary complications* which may arise in the course of the disease. No vague terms are therefore used in a scientific nosology, nor ought any place be assigned to purely symptomatic or secondary affections.

A *statistical classification of deaths*, on the other hand, must be a practical one; and it must be so drawn up as to give an accurate abstract of all the causes of deaths which are entered on the registers. It ought, therefore, to take as its basis the best, the simplest, and the most intelligible nosology on which its framers can lay their hands; and must also adopt as one of its leading principles that every death must, so far as practicable, be tabulated under the *primary disease*, and not under its secondary complications. That is to say, that a case of phthisis proving fatal by an attack of pneumonia, or of bronchitis, is tabulated as phthisis, and not as pneumonia, or bronchitis; while a case of measles proving fatal by a supervening attack of bronchitis is tabulated as measles, and not as bronchitis. To this extent, therefore, there is no difference between a scientific and a statistical nosology.

But as a *statistical classification* has to deal with facts, and not with theories, and as the statistical tables must exhibit the whole deaths in the registers, else they are of no use, and all these deaths must, as far as practicable, be arranged under their proper heads, it requires to make additions to almost every class of diseases, in order that all those deaths, whose definitions are given too imperfectly in the registers to enable them to be assigned to their exact species, may, at all events, be tabulated under their proper class. Hence, for instance, after exhausting all the great leading species of brain diseases, such as cephalitis, apoplexy, paralysis, etc., the statistical classification requires to add the vague term "brain diseases," meaning thereby all the diseases of the brain and nervous system, so imperfectly defined in the registers that they were not able to be assigned to their exact species. The same additions require to be made to the lung, stomach, kidney, uterine, and other diseases.

But still further alterations require to be made in every *statistical nosology*. Many deaths are recorded as being caused by *secondary complications*, while the primary cause has not been ascertained, either from there being no medical attendant, or from the medical attendant being himself at a loss as to the primary affection. Dropsy is of this nature. In a *statistical classification of deaths*, therefore, dropsy must have a place; though it would have no place in a scientific nosology, seeing it is but the symptom of an organic lesion. But in the statistical nosology only those deaths are tabulated under dropsy in which the organ primarily affected was not distinguished; otherwise, had the death been entered on the register as "dropsy from heart disease," or "dropsy from diseased liver," the death would have been tabulated under heart disease, or under liver disease, and not under dropsy.

The same principle applies to many other diseases, or classes of diseases. Thus, atrophy is not a disease, but a symptom—a consequence of more than one organic lesion in some vital organ, which even the ablest medical men will

fail to trace to its primary cause in every case. Yet we must have a place for atrophy. Such is also the case with old age, etc.

For most practical purposes it is only important to know the total number of deaths in a population caused by certain classes of disease; say, for instance, of the respiratory organs. But were a purely scientific classification followed, a great number of lung diseases, whose names were too vaguely defined in the registers to enable them to be referred to their exact species, would be thrown out, and be altogether lost to science, because they would be thrown into the class termed "causes not ascertained." By following a purely *scientific* classification, therefore, the population would seem to be much more free from lung diseases than they really were; and an entirely false conclusion would be arrived at, because we were so foolish as to adopt a purely scientific nosology. By converting the *scientific*, however, into a *statistical classification*, and adding these vague terms at the end of every class, the deaths from each class of disease, at all events, are accurately ascertained, and correct conclusions arrived at relative to the comparative freedom from, or susceptibility to, certain classes of disease in certain populations.

But a classification of deaths for statistical purposes ought to be constructed on quite different principles from a scientific nosology. *A scientific nosology should alter with the progress of medical literature*, and be in each age a correct representation of the prevalent theories of the day regarding the origination or supposed causes of disease. But a *statistical nosology* being for an entirely different purpose, ought to be drawn up on a few known and intelligible principles, of which the most important is that given in the new Scottish classification, as Rule III., viz., "So far as practicable, every disease causing death must be tabulated under the organ of the body which was primarily or chiefly affected."

A statistical classification of deaths drawn up on such a clear and intelligible principle never could clash with any scientific nosologies. Whatever were the theories relative to disease, tables drawn up on such a principle could be consulted with advantage, and all the facts deducible from them be easily made applicable to any theoretical nosology of the day. Such a classification would, however, possess the immense advantage over every other, that besides being intelligible and easily worked, it pandered to no medical theory which was fashionable to-day, but refuted and abandoned to-morrow. Once adopted, therefore, such a classification would never hereafter require to be amended or departed from; so that the most exact comparisons could be made as to the prevalence of any class of diseases in former years with the year under consideration; changes in the form or prevalence of different diseases; the circumstance of one disease taking the place of another,—all could be traced; and then the most important consideration of all would be, that the vital statistics of all the various departments of Government, and the different divisions of this kingdom, would adopt the same classification.

A few words of explanation seem requisite relative to the proposed new classification itself. In every statistical classification of the causes of death, the number of diseases must be limited, in order to come within such limited space as we can afford for printing. All the rare diseases, therefore, have their names left out of the classification, because they are included in the vague terms appended to each class. In the tables themselves, however, they are all entered as side notes, so that nothing is lost.

In the above classification it has been attempted to carry out, to its full extent, the third rule,—viz., that every disease causing death must be tabulated under the organ of the body which was primarily and chiefly affected. A distinct class of diseases, however, affects every organ of the system simultaneously; but as these are always attended with that morbid affection to which we give the term "Fever," all such diseases conveniently arrange themselves under Class I., to which is applied the term "Fevers." One disease alone is provisionally put under fevers, viz., diphtheria. This disease chiefly proves fatal through its extension to the respiratory organs; but it is not

primarily an affection of these, but of the mucous membrane of the mouth and throat, dependent on a general derangement of the whole system, of a nature entirely similar to that of one of the eruptive fevers. According to the rule laid down, therefore, diphtheria must either be classified under diseases of the organs of digestion, or, where I have provisionally put it, under fevers. It seems to me to be so closely allied to cynanche maligna and cynanche tonsillaris, both of which are undoubted forms of scarlatina, that it seems to me we have no choice left us but to place it after scarlatina.

For statistical purposes there can be no such class allowed as the tubercular; it would violate all our rules. Every disease now put under that class must be referred to the organ of the body chiefly affected; so phthisis must be referred to diseases of the respiratory organs; hydrocephalus, to diseases of the brain; tabes mesenterica, to diseases of the organs of digestion.

Hooping-cough and croup are so purely diseases of the respiratory organs, the wonder is they were ever put elsewhere. Diarrhoea, dysentery, and cholera, may be called the leading diseases of the organs of digestion, and that is their undoubted proper place.

Metria, itself a secondary affection, seeing it never can occur but during childbirth, can only stand under diseases of the organs of generation. Were it a primary disease, its proper place would have been under fevers; but being merely one of the modes in which the normal operation of nature, childbirth, proves fatal, it can have no other position than where I have put it.

The above remarks will prove the necessity which exists for having, in a statistical classification of deaths, a class which shall include diseases which occur in various organs, which attack no one unvarying seat or organ, or which are mere symptoms of the existence of other organic affections, whose nature was not satisfactorily ascertained. Class X. includes these diseases. Under the term *hemorrhage* are only tabulated those deaths said to be caused by hæmorrhage, but in which the organ from which the hæmorrhage proceeded is not mentioned. If the organ is mentioned, the death is not tabulated under hæmorrhage, but under uterine, stomach, heart diseases, etc., as the case may be. I have already remarked as to why *dropsy* is in this class. *Fistula* I also put here; because, in most cases as yet, the registers only state that the death resulted from fistula, without saying whether it were anal or on the margin. *Mortification* is not confined to the skin, nor to one organ, and depends on many different causes; its proper place is therefore here. There is no other place for *cancer*. *Purpura* (with which we tabulate *scurvy*) is in one sense a blood disease; but it is equally a disease of all the tissues, depending on general causes which affect every organ of the body. This is therefore its proper place. The same may be said of *scrofula*. We still know too little regarding the pathology of *gout* and *rheumatism* to refer them with certainty to any one organ. They affect the bursæ, the synovial and the white tissues, the membranous tissues, the muscles, the diaphragm, and even the heart itself. Even when they prove fatal, it is generally through some secondary affection, as pericarditis, of which we take no note in a statistical table of deaths, seeing our rule is to tabulate the death under the primary affection. There is no other place for them, therefore, than in Class X. *Atrophy*, the last of this class, I have already remarked on, and given the reasons for its position here. It has no claim to be made a separate class.

There is both a propriety and a convenience, however, in making separate classes of *malformations*, of *debility at birth* and *premature birth*, of *old age*, and of *sudden deaths*. None of these can be strictly referred to any class under the three rules laid down for the construction of the table, yet they are causes of death under which many persons are registered, and we must find a place for them in a statistical classification.

Under the *violent and unnatural deaths* are classed *poison*, limiting the term to poisons taken into the stomach; *poisoned bites, wounds, stings*, and then one of the consequences of a poisoned bite, *hydrophobia*. As this last is not the primary but the secondary cause which led to the death, the bite being the

primary, so hydrophobia is most properly arranged here. In like manner, intemperance (which is alcoholic poisoning), and its frequent secondary affection, *delirium tremens*, naturally belong to this group. *Delirium tremens*, being a secondary affection and not a primary (which is the alcoholic poisoning), has no claim to be arranged under brain diseases; but here it is associated with its primary cause. All the other causes referred to the violent deaths would be so arranged under any classification, so that nothing need be said regarding them.

The causes not specified are required to complete the table, and they ought to form a separate class, as well as the sudden deaths.

As there is a pressing necessity for a good and easily workable classification of the causes of death for statistical purposes being adopted by England, by Scotland, by Ireland, and by the army and navy boards, I trust that the superintendents of these different departments, and the medical profession generally, will carefully examine the above-proposed classification; and if they cannot suggest a simpler or a better for statistical purposes, let us have a meeting here, or in London, and agree as to the adoption of this as a uniform system for the classification of the deaths, on which all our reports will be founded.

It will be seen that the number of diseases specified in the above table is limited. This is necessary in every statistical table, so as to bring it within moderate dimensions, both for working it and printing it; especially when we have to deal with large numbers and with numerous districts. To fit it, however, for the tabulation of the diseases which occur in civil, military, or naval hospitals, it only requires to be extended, so as to include every disease. Thus, in the above, and every similar table, under smallpox are included varicella, with vaccinia and its consequences. Under typhus are included typhus proper, synochus, gastric, typhoid, and infantile fevers. Under pericarditis, there are carditis and endocarditis. And so on with all diseases. To render the proposed classification a complete nosology, therefore, it only requires the same extension that every statistical nosology needs, no matter what may be the classification adopted. Specifying every disease would make no difference whatever in the classification.

RECENT OUTBREAKS OF FLESH-WORM DISEASE, OR TRICHINIASIS, IN GERMANY.

A FEW months ago, there was a festive celebration at Hettstadt, a small country town near the Hartz mountains, in Germany. Upwards of one hundred persons sat down to an excellent dinner, and, having enjoyed themselves *more majorum*, separated, and went to their homes.

Of these 103 persons, mostly men in the prime of life, eighty-three are now in their graves; the majority of the twenty survivors linger with a fearful malady; and a few only walk apparently unscathed among the living, but in hourly fear of an outbreak of the disease which has carried away such numbers of their fellow-diners.

They had all eaten of a poison at that festive board, the virulence of which far surpasses the reported effects of *aqua tophana*, or of the more tangible agents described in toxicological text-books. It was not a poison dug out of the earth, extracted from plants, or prepared in the laboratory of the chemist. It was not a poison administered by design or negligence. But it was a poison unknown to all concerned; and was eaten with the meat in which it was contained, and of which it formed a living constituent.

When, about thirty years ago, the then demonstrator of anatomy at Guy's Hospital, Hilton, observed a little speck on a muscular fibre, and suspected it to contain a worm, he little dreamed that he had before his eyes the puny specimen of a race of parasites more fatal to man and animals than the virus of the blackest pestilence. When the student Paget sent to the Hunterian con-

servator Owen that specimen of speckled muscle taken from a body in St Bartholomew's Hospital, he probably knew that he was sending a curiosity; but did, perhaps, not imagine that it was an example of disease which might be carried in a living pig from Valparaiso to Hamburg, and kill the entire crew of a merchant vessel. When Owen registered *trichina spiralis* in the Latin terms of zoology, whatever idea he had formed of the generation and life of his parasite, he certainly could not have dreamed, in the keenest flights of his imagination, that of the acute disease caused by this parasite in 103 healthy persons, eighty-three would have to die a most painful and melancholy death, and the remainder be brought into imminent danger.

When the festival at Hettstadt had been finally determined upon, and the dinner had been ordered at the hotel, the keeper of the tavern arranged his bill of fare. The introduction of the third course, it was settled, should consist, as usual in those parts of the country, of *Rosetewurst und Gemuse*. The *Rosetewurst* was, therefore, ordered at the butcher's the necessary number of days beforehand, in order to allow of its being properly smoked. The butcher, on his part, went expressly to a neighbouring proprietor, and bought one of two pigs from the steward, who had been commissioned with the transaction by his master. It appears, however, that the steward, unfortunately, sold the pig which his master had not intended to sell, as he did not deem it sufficiently fat or well-conditioned. Thus the wrong pig was sold, carried on a barrow to the butcher, killed, and worked up into sausages. The sausages were duly smoked and delivered at the hotel. There they were fried, and served to the guests at the dinner table.

On the day after the festival, several persons who had participated in the dinner were attacked with irritation of the intestines, loss of appetite, great prostration, and fevers. The number of persons attacked rapidly increased; and great alarm was excited in the first instance by the apprehension of an impending epidemic of typhus fever or continued fever, with which the symptoms observed showed great similarity. But when, in some of the cases treated by the same physician, the features of the illness began to indicate at first acute peritonitis, then pneumonia of a circumscribed character, next paralysis of the intercostal muscles and the muscles in front of the neck, the hypothesis of septic fever, though sustained in other cases, had to be abandoned with respect to these particular cases. Some unknown poison was now assumed to be at the bottom of the outbreak, and an active inquiry into all the circumstances of the dinner was instituted. Every article of food and material was subjected to a most rigid examination, without any result in the first instance. But when the symptoms in some of the cases invaded the muscles of the leg, particularly the calves of some of the sufferers, the description which Zenker had given of a case of fatal trichinous disease was remembered. The remnants of sausage, and of pork employed in its manufacture, were examined with the microscope, and found to be literally swarming with encapsuled trichinae. From the suffering muscles of several of the victims small pieces were excised, and under the microscope found charged with embryonic trichinae in all stages of development. It could not be doubted any longer, that as many of the 103 as had partaken of *Rosetewurst* had been infested with trichinous disease by eating of trichinous pork, the parasites of which had, at least in part, escaped the effects of smoking and frying.

This awful catastrophe awakened sympathy and fear throughout the whole of Germany. Most of the leading physicians were consulted in the interest of the sufferers, and some visited the neighbourhood where most of the afflicted patients remained. But none could bring relief or cure. With an obstinacy unsurpassed by any other infectious or parasitic disease, trichiniasis carried its victims to the grave. Many anthelmintics were arrayed to destroy, if not the worms already in the flesh, at least those yet remaining in the intestinal canal. Picric acid was employed until its use seemed as dangerous as the disease; benzole, which had promised well in experiments upon animals, was tried, but was unavailing. As case after case died off, and the dissection of each proved

the parasites to have been quite unaffected by the agents employed, the conviction was impressed upon every mind that a man afflicted with flesh-worm is doomed to die the slow death of exhaustion from nervous irritation, fever, and loss of muscular power, in systems essential to existence.

But medical science had only just unravelled a mystery, and if it could not save the victims, it was determined, at least, to turn the occasion to the next best account. The cases were, therefore, observed with care, and chronicled with skill. All the multifarious features of the parasitic disease were registered in such a manner, that there can hereafter be no difficulty in the diagnosis of this disorder. A valuable diagnostic feature was repeatedly observed—namely, the appearance of the flesh worm under the thin mucous membrane on the lower side of the tongue. The natural history of trichina in man was found to be the same as that in animals.

All observations led to the conviction that the trichina encapsuled in the flesh is in the condition of puberty. Brought into the stomach, the calcareous capsule is digested with the flesh, and the trichina is set free. It probably feeds upon the walls of the intestines themselves; for the irritation of the intestines begins before the bringing forth of young trichinæ has taken place. Copulation is immediately effected; and within a few hours, or a short portion of days, from sixty to eighty live embryos leave the female, and begin their own career of destruction.

This consists, in the first instance, in an attempt to pierce the wall of the intestinal canal. Great inflammation of the entire surface ensues, ending not rarely in death of the villous or mucous membrane, or in the formation of masses of pus on its surface. Sometimes there are bloody stools. But these severe symptoms only ensue when much trichinous meat has been eaten. When less has been consumed, pain and uneasiness in the abdomen are produced, accompanied, however, in all instances, by wasting fever and prostration. The embryos actually pierce the intestines, and are found free in the effusion, sometimes serous, sometimes purulent, which is always poured out into the abdominal cavity. Thence they again proceed towards the periphery of the body, pierce the peritoneum, causing great irritation, and sometimes peritonitis, to the extent of gluing the intestines together to a coherent mass. They next proceed to the muscles nearest to the abdomen; arrived at the elementary muscular fibres, which, under the microscope, appear as long cylinders with many transverse striæ, they pierce the membranes, enter the fibres, eat and destroy their striated contents, consume a great part of the granular detritus, moving up and down in the fibres until grown to the size necessary for passing into the quiescent state. They then roll up in spiral or other irregular windings, the bags of the muscular fibres collapse, and only where the trichinæ lie a calcareous matter is deposited, perhaps by the trichinæ themselves, which hardens into perfect capsules round the parasites. A muscular fibre may harbour one or several parasites; but every fibre invaded by a single parasite loses its character entirely, and becomes a bag of detritus from one end to the other.

If it be remembered that one ounce of meat filled with trichinæ may form the stock from which, in a few days, three millions of worms may be bred; and that these worms will destroy in the course of a few weeks not less than two millions of striated muscular fibres—an idea of the extent of destruction produced by these parasites can be formed. We are not in a position to say to what proportion of the fifty or sixty pounds of muscle required for the performances of the human body these two millions of elementary fibres actually amount. In the muscles nearest to the abdomen the destruction is sometimes so complete, that not a fibre free from parasites can be found. This amounts to complete paralysis. But death is not always produced by the paralysis; it is mostly the result of paralysis, peritonitis, and irritative fever combined. No case is known in which trichiniasis, after having declared itself, became arrested. All persons affected have either died, or are in such a state of prostration that their death is very probable.

Most educated people in Germany have, in consequence of the Hettstadt tragedy, adopted the law of Moses, and avoid pork in any form. To some of the large pig-breeders in Westphalia, who keep as many as two thousand pigs, the sinking of the price of pork has become a ruinous—at the least, a serious—loss. In the dining-rooms of the hotels in the neighbourhood of Hettstadt, notices are hung up announcing that pork will not be served in any form in these establishments. To counteract this panic, the farmers' club of the Hettstadt district gave a dinner at which no other meat but pork was eaten. But it has had no appreciable effect. The raw ham and sausages of Germany are doomed to extinction. The smoked and fried sausages must necessarily be avoided. What parts of the pig can be eaten in the form of sausages with any degree of safety remains to be ascertained. The Germans think not any. They have ceased to believe in roast pork, sausages, pork cutlets, and the like; and admit pork only in the form of thoroughly cured, well smoked, well seasoned, tender boiled ham, and in that of long kept, well cured, well fried bacon. The rest is believed to be tainted with the danger of trichina. So lively is the popular panic, that when pigs are being driven through the streets, the boys shout after them—"Trichinæ! trichinæ!" This has the effect of making the drivers angry, and causing them to hit the boys if they can, and if the urchins are too quick for them, the stripes fall upon the poor pigs.

In the south of Germany, some people now say that the Hungarian pigs are most frequently affected with trichinæ. This rumour, like the famous pork dinner of the farmers' club, may, however, have been set up with the intention of quieting apprehension about the native pigs. We have already mentioned the accident which befell the crew of a merchant vessel. They shipped a pig at Valparaiso, and killed it a few days before their arrival at Hamburg. Most of the sailors ate of the pork in one form or another. Several were affected with trichinæ and died. Of those whose fate could be inquired into, one only seems to have escaped the parasites. Another outbreak in Saxony has carried away twelve persons. A fourth wholesale poisoning by trichinæ is just reported from Offenbach, the Birmingham of Hesse-Darmstadt. Of upwards of twenty persons infected, three had already died when our correspondent's letter left. Numerous sporadic cases of fever, and epidemics of inscrutable peculiarity but referred to an anomalous type of fever, are now claimed by medical authors, and with much show of reason, to have been outbreaks of trichiniasis, or flesh-worm disease. Several German physicians experimentalize with a view of finding a cure for this terrible disorder. Professor Eckhardt at Giessen, we are told, has obtained permission to try the disease and supposed remedies upon a murderer under sentence of death. We have not been told whether his reward in case of success is to be a commutation of his capital sentence; but should hope this to be the case. The experiment, even if it should not have the romantic character indicated, will probably teach some curious details of the life of these parasites. Almost everywhere, the commonest rules of cleanliness are disregarded in the rearing of pigs. Yet pigs are naturally clean animals, avoiding, like dogs and cats, all contact with ordure. Though they burrow in the earth, and in summer wallow in the mud, they abhor the heaps of excrements mixed with straw in and upon which they are frequently kept. A due regard to cleanliness will prevent trichinæ in the pig. In wild boars, of which many are eaten in the country round the Hartz mountains, trichina has never been found. Neither has it been met with in sheep, oxen, or horses. Beef is the safest of all descriptions of meat, as no parasites have even been discovered in it. They have also never been found in the blood, brain, or heart, of those animals in whose striated muscles they love to reside.

As it would be useful if the medical profession, as the natural guardian of public health, were to put people on their guard against eating pork in an underdone condition, and otherwise than in the form of thoroughly boiled or roasted meat, we propose to our readers to use the word *flesh-worm* for popularly designating trichinæ. The word seems to express, to some extent, the horrors of the disease. Lastly, we would recommend to every medical man to make

himself thoroughly acquainted with the symptoms and characters of the disease; as it does not seem to be very uncommon, but rather hitherto to have escape observation.—*British Medical Journal*.

POISONING BY CYANIDE OF POTASSIUM.—DANGERS TO PHOTOGRAPHERS.

DR DAVANNE directs attention to the dangers to which those who are engaged in the art of photography are exposed. They use constantly, he says, two of the most active poisons—namely, cyanide of potassium and bichloride of mercury. Their hands are constantly in contact with strong solutions of these poisons; and often, in spite of repeated warnings, they run absurd risks. The author gives an account of a case in which a gentleman, who had stained his hand with nitrate of silver, endeavoured to remove the stain by rubbing over it cyanide of potassium freely. In the act, he slid under the nail of one of his fingers a small portion of the cyanide salt. At first he did not notice this, but in a little time he felt a sharp pain in the part, followed, after a few minutes, by an intense vertigo, so that all objects appeared to be moving around him. To relieve him promptly, he conceived the unfortunate idea of employing vinegar; the cyanide was quickly decomposed, and hydrocyanic acid was produced absolutely. The vertigo now increased, accompanied by shiverings, pallor of the face, loss of sight, and great exhaustion. The power of speech was lost, but the intelligence was preserved. The extremities were cold, and as the sight returned there was double vision. The symptoms did not pass away for ten hours.

The treatment adopted consisted of cold and friction on the spinal column, inhalation of ammonia vapour, and the administration of strong infusion of black coffee.—*Brit. and For. Med.-Chir. Rev.*, from *Canstatt's Jahresh.*

IMPROVEMENT IN THE PARIS HOSPITALS.

A SITTING-ROOM is to be attached to each dormitory, so that when a patient is sufficiently recovered to leave his bed, he may have a place to read or to play at some innocent game, such as chess or draughts. Besides assisting in a perfect recovery of the convalescents, this plan will enable the patients confined to their beds to enjoy more quiet.

ON THE PREVALENCE OF CALCULUS IN THE VALLEY OF THE GANGES.

(To the Editor of the *Edinburgh Medical Journal*.)

SIR,—Dr Gairdner's Note on Calculus in India (p. 775 of the *Edinburgh Medical Journal* for February last) has been partly answered by Dr Playfair at p. 828 of the same journal for the present month (March). But the last gentleman hints that there are probably other causes in addition to food which operate in producing the disease. In this opinion I concur; and now propose giving a short account of such influences, confining my remarks to Bengal and the North-West Provinces (the grand valley of the Ganges), which, as the portion of India in which I have served, is that with which alone I am personally acquainted.

I consider that three conditions at least determine the production of calculus: 1st, The character of the water used for drink; 2d, The nature of the food; 3d, The climatic influences: and I propose to show the difference observable in these in the three great divisions of the Gangetic valley,—Bengal proper, Behar, and the North-West Provinces, with the effect on the population as regards the production of calculus.

BENGAL PROPER.—The water used for drink is almost universally soft, obtained from rivers, lakes, and ponds, or drawn from wells generally very shallow, and obtained by percolation near the surface. The food consists chiefly of rice, with pulse and vegetables, and ghee (clarified butter), and spices. The

climate is a moist one, not very cold even in January, and, though hot in April, May, and June, is without the parching dryness of the upper provinces. There is, in consequence, comparatively little difference in the action of the skin and kidneys at the different seasons, and calculus may be said to be unknown—the few cases which appear in the dispensary returns being generally, if not always, imported.

BEHAR.—The inhabitants now begin to drink *well water*, which, though generally good, has occasionally some hardness. The *food* begins to change, many of the inhabitants using attah (coarse ground wheat) made into unleavened cakes or scones; rice, however, inferior grains, and Indian corn, are still largely used, as also vegetables, ghee, and spices. The *climate* is intermediate between that of Bengal and the North-West Provinces: hot, but not very dry in April, May, and June, hot and damp in the rains (July, August, and September), and cold enough in December and January to suppress much of the action of the skin, and throw an increased duty on the lungs and kidneys. The result is that calculus begins to appear, and in the principal dispensaries in Behar (at least towards the side of the North-West Provinces), from six to twelve cases are operated on annually.

NORTH-WEST PROVINCES.—*Water* here is almost universally obtained from wells, and is of the hardest quality. I found in water from a well near Delhi, that after boiling and filtering I obtained a deposit of not less than fifteen or sixteen grains from each pint on evaporating to dryness; and though this was an extreme case, yet even water from the best wells, if allowed to stand in any vessel, soon formed a deposit round the edge. The *food* for the great majority of the people consists of wheat, in the shape of attah—the Hindoos using it unleavened, but the Mohammedans, in the cities at least, having their bread raised by fermentation. The poor peasants use during the cold season some of the varieties of millet and other grains, which are cheaper, and, they think, more heating. Spice, vegetables, and ghee are used as elsewhere; rice scarcely at all. The *climate* varies much according to season. November, December, January, and February are so cold that there is little action of the skin, and the quantity of urine thrown off is very large. In April, May, and June the heat is intense, and the air extremely dry. (I have seen at least 20° difference between the wet and dry bulb of the thermometer.) An enormous quantity of moisture is thrown off by the skin, though there is little sensible perspiration, and the urine is diminished to a minimum, being of course proportionally loaded with salts. During the rains—July, August, and September—the atmosphere being moist, the perspiration is sensible; or, I may rather say, there is no escape from observing it. While writing at the desk it pours from hands and arms; even sitting still may be called hard work. Of course, under these circumstances, the urine remains very scanty and much loaded, though less so than in the dry, hot weather.

The result of the above concatenation of circumstances is a prevalence of calculus truly surprising, and so universal that wherever a good operator establishes himself, cases pour towards him almost without number.

The above remarks apply to natives; I have heard of only three cases of calculus in Europeans. One occurred in the child of a medical officer at Muttra, whom I assisted to operate; the second in a boy at Cawnpore; and the third in a European soldier at one of the hill stations. The two first cases terminated successfully; with the result of the third I am not acquainted.

As regards the composition of the calculi, time under treatment, etc., the mutiny in 1857 swept away a large mass of information collected during my Indian career, but I may give in a table notes of the cases operated on since my return to Delhi in 1858. This includes *every case* which presented itself. The cases were less numerous than they would have been owing to the danger of travelling; the difficulty the country people experienced in obtaining access to the city; and also from the great reduction in the number of the inhabitants of Delhi itself.

JOHN BALFOUR, I. G. H. Ret.

TABLE OF CALCULI EXTRACTED AFTER SEPT. 13, 1858.

No.	AGE.	RESIDENT OF	CASTE OR OCCUPATION.	DATE OF OPERATION.	DATE OF DISCHARGE.	REMARKS.	CHEMICAL COMPOSITION.
1	3	Delhi, ...	Cahar, ¹	Sept. 13, 1858.	Oct. 5, 1858.	Stone weighed 100 grs.	Uric acid.
2	30	Delhi, ...	Mallee, ²	Oct. 13, " "	Nov. 4, " "	" " 110 grs.	Do.
3	4	Village near Delhi, ...	Jat, ³	Nov. 2, " "	Nov. 4, " "	" " 6 grs., excised from urethra.	Uric acid.
4	16	50 miles west of Delhi, ...	Jat, ...	Nov. 10, " "	Nov. 29, " "	Two stones,—1st, 260 grs.; 2d, 195 grs.; beginning to accrete. Operated on six years before.	Uric acid. Phosphatic deposit externally.
						Operation performed through old cicatrix. Some venous hemorrhage.	
5	6	Delhi, ...	Joolaha, ⁴	Nov. 30, " "	Dec. 28, " "	Stone weighed 5 drs. 30 grs.; was lodged in the neck of the bladder and urethra, forming a regular cast of the parts. Operation performed on the gripe.	Uric acid. Nucleus, oxalate of lime. Phosphates externally.
6	5	Near Delhi, ...	Chumar, ⁵	Nov. 30, " "	Dec. 30, " "	Stone weighed 170 grs.	Uric acid. Nucleus, oxalate of lime.
7	6	20 miles east of Delhi, ...	Rajpoot, ⁶	Dec. 19, " "	Jan. 5, 1859.	68 grs.	Uric acid.
8	12	Delhi, ...	Rungrez, ⁷	Jan. 1, 1859.	Jan. 27, " "	" " 1 oz. 3 drs.	Do.
9	5	Delhi, ...	Bunneeah, ⁸	Feb. 7, " "	Feb. 26, " "	" " 40 grs.	Uric acid nucleus. Mass of phosphates externally.
10	7	20 miles south of Delhi, ...	Chumar, ...	Feb. 24, " "	Mar. 27, " "	" " 1 oz. 6 drs. 50 grs. Was fearfully reduced; a perfect skeleton when admitted.	Oxalate of lime nucleus. Bulk of calculus phosphate of lime, with one or two thin layers of fusible calculus.
11	40	Delhi, ...	Chumar, ...	Feb. 26, " "	Mar. 19, " "	Two stones,—1st, 2 oz. 1 dr.; 2d, 1 oz. 7 drs.; beginning to accrete. Suffered from enlarged spleen. Passive hemorrhage set in soon after the operation, which was not checked until the wound was plugged.	Uric acid. Nucleus, oxalate of lime.
						Stone weighed 50 grs.	Uric acid.
12	7	30 miles east of Delhi, ...	Chumar, ...	Mar. 3, " "	Mar. 19, " "	" " 186 grs.	Oxalate of lime. Mulberry calculus.
13	7	Delhi, ...	Chitcreamar, ⁹	Mar. 11, " "	Mar. 28, " "	" " 22 grs.	Uric acid.
14	12	20 miles south of Delhi, ...	Aheer, ¹⁰	June 14, " "	July 1, " "	" " 2 drs.	Oxalate of lime. Mulberry calculus.
15	13	Delhi, ...	Gooljur, ¹¹	July 1, " "	Aug. 8, " "	" " 2 drs.	Uric acid.
16	4	Dinapore, ...	Bhishtie, ¹²	Feb. 3, 1863.	Feb. 17, 1863.	" " 2 drs. 1 ser. 6 grs. Nephew of my own servant, who requested me to operate.	

1 Cahar;—palanquin bearer; wages variable, and work hard; poorly off; often drunken.

2 Mallee;—gardener; wages moderate; vegetables at command; fairly off.

3 Jat;—a large farming class, respectable, and generally well off.

4 Joolaha;—weaver; poorly off; wages very low; ill fed.

5 Chumar;—tanner; low caste; eating any sort of food, often carrion; drunken.

6 Rajpoot;—soldier class, often farmers; respectable; generally fairly off, and well fed.

7 Rungrez;—dyer; not very well off.

8 Bunneeah;—shopkeeper (grocery); well fed and oily; very inactive generally.

9 Chitcreamar;—bird-catcher; poorly fed; undergoes much exposure; hard work.

10 Aheer;—grazier, also farmers; generally well off; using much milk.

11 Gooljur; born thieves, cattle-stealers, now watchmen and farmers; fine, powerful men; fairly off.

12 Bhishtie;—water-carrier; fine, active men; fairly fed; very faithful.

N.B.—No. 9 is the only Mohammedan in the lot.

MEDICAL SOCIETY OF VIENNA.

Dr DAVID SKAE, of the Royal Edinburgh Asylum, has been elected a corresponding member of the Royal Imperial Society of Physicians of Vienna.

MEDICAL APPOINTMENT.

W. GILCHRIST, M.D. (Edin.), has been appointed Hon. Physician to the Erith House Institution for Ladies with Affected Chests, at Torquay.

PUBLICATIONS RECEIVED.

- Broca,—On the Phenomena of Hybridity in the Genus Homo. By Dr Paul Broca. Edited by C. Carter Blake, F.G.S., etc. London, 1864.
- Colin,—Etudes Cliniques de Médecine Militaire. Par Professeur Léon Colin. Paris, 1864.
- Cre-Fydd,—The Young Housewife's Daily Assistant. By Cre-Fydd. London, 1864.
- Cumberland and Westmoreland Lunatic Asylum Report for 1863.
- Edwards,—On the Economical Use of Fuel, and the Prevention of Smoke in Domestic Fireplaces, etc. By Frederick Edwards, jun. London, 1864.
- Gant,—The Principles of Surgery. By Frederick James Gant, F.R.C.S. London, 1864.
- Griffith,—An Elementary Text-book of the Microscope. By J. W. Griffith, M.D., etc. London, 1864.
- Gurlt,—Handbuch der Lehre von den Knochenbrüchen. Von Dr E. Gurlt. Zweiter Theil. 1. Lieferung. Hamm, 1864.
- Haselden,—Notes on the British Pharmacopœia. By A. F. Haselden. London, 1864.
- Hodges,—Nature, Pathology, and Treatment of Puerperal Convulsions. By Richard Hodges, M.D., etc. London, 1864.
- Huxley,—Lectures on the Elements of Comparative Anatomy. By Thomas Henry Huxley. London, 1864.
- Markham,—Modern Scepticism in Medicine. By W. O. Markham, M.D., etc. London, 1864.
- Meadows,—The Prescriber's Companion. By Alfred Meadows, M.D., etc. London, 1864.
- Strange,—The Seven Sources of Health. By William Strange, M.D., etc. London, 1864.
- Struthers,—Anatomical and Physiological Observations,—Part ii. By John Struthers, M.D., etc. Aberdeen, 1864.
- The Use of Certain Substitutes for the Genuine Ingredients in Some Articles of Daily Food. By a Lady. Brighton.
- Thomson,—Consumption in Australia: a Review. By W. Thomson.

PERIODICALS RECEIVED.

- American Journal of the Medical Sciences,—January. Philadelphia, 1864.
- Annales de l'Electrothérapie,—No. 3. Paris, 1864.
- Births, Deaths, and Marriages, Monthly and Supplementary Returns of, for January, February, and March 1864; and Year 1863. British and Foreign Medico-Chirurgical Review,—April. London, 1864.
- British Medical Journal,—Jan. 30 to April 23, 1864.
- Bulletin Générale de Thérapeutique,—Dec. 15, 30, 1863; Jan. 15, 30; Feb. 15, 1864. Paris.
- Canstatt's Jahresbericht,—Index for 1862. Dublin Medical Press,—Jan. 27 to April 27, 1864.
- Dublin Quarterly Journal of Medical Science,—February 1864.
- Gazette des Hôpitaux,—Nos. 10 to 47. Paris, 1864.
- Gazette Hebdomadaire de Médecine, etc.—Jan. 29 to April 22. Paris, 1864.
- Gazette Médicale d'Orient,—Jan. and Feb. 1864.
- Gazette Médicale de Paris,—Nos. 5 to 17, 1864.
- Glasgow Medical Journal,—April 1864.
- Henke's Zeitschrift für die Staatsarzneikunde,—No. 1. Erlangen, 1864.
- Journal de Médecine et de Chirurgie,—January, March, April. Paris, 1864.
- Journal für Kinderkrankheiten,—Nov. and Dec., and Jan. and Feb. Erlangen, 1863-1864.
- Journal de la Physiologie (Brown-Séquard's), No. 20, Oct. 1862; No. 23, July 1863.
- Journal of the Scottish Meteorological Society,—No. 1. January. Edinburgh, 1864.
- Medical Times and Gazette,—January 27 to April 23, 1864.
- Medizinische Jahrbücher,—Nos. 5 and 6, 1863; and No. 1, 1864. Vienna.
- Ophthalmic Review,—No. 1. April 1864.
- Revue de Thérapeutique Medico-Chirurgicale,—Feb. 1, 15; March 15; April 1, 15. Paris, 1864.
- Vierteljahrsschrift für die praktische Heilkunde,—Vol. 1. for 1864. Prague.
- Wochenblatt der Zeitschrift der Aerzte,—Nos. 48 to 52; and 1 to 10. Vienna, 1863-1864.
- Würzburger Medicinische Zeitschrift,—Vol. 4: Parts 5 and 6. 1863.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On Literary and Scientific Studies in Connexion with Medicine, being Part of the Opening Lecture of the Course of Botany in May 1864.* By J. H. BALFOUR, M.A., M.D., Professor of Medicine and Botany.

NATURAL SCIENCE, in all its departments, has now become an important part of education, not merely on account of its connexion with professional studies, but also from its value in mental training. It exerts a most beneficial influence on the observant faculties; it calls the perceptive powers into action; it teaches the student to note the resemblances and differences among objects; it promotes the formation of orderly and systematic habits; and it enforces accuracy, both of observation and of expression. It also benefits the mind by investing the objects around us with a new interest, and it supplies healthy and cheerful occupation at all times.

The value of natural history as an educational science consists mainly in its teaching the student to observe truly and to note accurately. The prosecution of it ought not to be confined to any one profession, such as that of medicine. It should, to a certain extent, constitute a part of a liberal education. The student of classics, mathematics, and philosophy ought not to ignore the knowledge of God's works in the creation around him. The Scottish Universities Commissioners, feeling the importance of this, have instituted honours for arts in the department of science, and it is to be hoped that ere long candidates will present themselves for this laureation. Why should not a portion of the summer be devoted to this subject by those who have been prosecuting their literary studies during the winter months, and whose long vacation might thus be in part profitably employed in preparing the way for their future professional career? Such an arrangement would, in my opinion, be much better than attempting to extend the curriculum of arts in the direction of classics and mathematics. It is surely of importance that the student of arts should know something of the objects in the material world with which he

is surrounded; that he should enlarge his views of nature, and have a sympathy with that science which teaches the structure, functions, and uses of the organized beings which people the globe, and of the unorganized matter which forms the crust? I look forward with confidence to the time when natural science will occupy a still higher place in our educational arrangements. The step which has just been taken by the University of Edinburgh, in establishing degrees in science, is one in a right direction. It is calculated to encourage the prosecution of natural science in all its departments. Full particulars in regard to these degrees will be given in the University Calendar.

In relation to medicine, botany must be viewed, not only as furnishing the medical man with valuable information in regard to the affinities and properties of medicinal plants, and enabling him to substitute one species for another with safety in circumstances where the usual remedies are not at hand; but it must be regarded as an important branch of preliminary study, which trains the mind of the student to those habits of observation and diagnosis which are so essential to the successful prosecution of his profession. The study of the physiology of plants, too, enables him to observe in a simpler form many of those phenomena which are more complicated and obscure in the higher orders of living beings. This is specially true of the functions of fertilization and embryogeny; the examination of which by eminent botanists, both in this country and on the Continent, has tended in no small degree to promote the advancement of animal physiology.

The training of the mind in correct methods of observation gives to botany and the other natural history sciences, their value as instruments of preparation for professional education. Edward Forbes justly remarks: "We must counteract the natural tendency of purely professional studies—the tendency to limit the range of mental vision. We can do this most beneficially through the collateral sciences, which are sufficiently allied to the professional ones to prevent an undue dissipation of the student's thoughts, and, at the same time, are sufficiently different to give them a wider sphere of action. It is in this point of view that we should regard the natural history sciences as branches of medical education. For my own part," continues Forbes, "after much intercourse with medical men, who have studied at many seats of professional education,—some collegiate, some exclusively professional,—I have no hesitation in saying, that, as a rule, the former had the intellectual advantage. There are noble and notable exceptions, old and young, but the rule is true in the main. The man who has studied in a seat of learning, such as a university, has a wider range of sympathies, a more philosophical tone of mind, and a higher estimate of the objects of intellectual ambition, than his fellow-practitioner, who, from his youth upwards, has concentrated his thoughts upon the contractedly professional subjects of an

hospital school. I will not believe that the practitioner of medicine, any more than the clergyman or the lawyer, or the soldier or the merchant, is wiser or better able to treat the offices of his calling because his mind takes no note of subjects beyond the range of his professional pursuit. It is a great pleasure, both to patient and neighbour, to find in our doctor an enlightened friend—one who, whilst he does his duty ably and kindly, has a sympathy and an acquaintance with science, literature, or art."

Those who magnify the hospital work so as to throw discredit on preliminary literary and scientific study are doing great harm to students of medicine. No one who knows the duties of a physician or surgeon will ever think of underrating the value of clinical instruction in hospitals; but, at the same time, no one who looks at the true position of medicine as a science, and of doctors as men of science belonging to a liberal profession, will disparage those studies which, when taken in proper time, are so well fitted to enlarge the mind, to call forth its powers, and give it the means of grappling successfully with the various intricate questions in connexion with bodily and mental diseases which are constantly coming under the notice of the medical man.

A university—at least as understood in Scotland—is not merely a Board authorized to examine students and grant degrees: it is an educational institution, intended to exercise a surveillance over the studies of youth; to train their minds for the proper acquisition of knowledge; and to direct their energies in such a way as to insure that mental culture which will fit them for all the duties of life. As food must be properly supplied to the body in order that it may be duly nourished, so must food be supplied to the mind. It must be given in proper quantity and at proper intervals. The mind must be able to digest what is given, and time must be allowed for this. The attempt to cram too much into the mind will fail in giving due mental strength; and the administration of nourishment in a fitful and irregular manner will not conduce to proper mental culture. As in the body, so in the mind, quality and quantity must be regulated. The infant, the young man, and the old man, require different kinds of diet, both corporeal and mental. Students who rush at once into what is called the practical work of medicine, and do not contemplate any thing beyond the walls of an hospital, may become what some have called *rough and ready* practitioners; but, wanting due mental cultivation, and the advantages of a liberal education, they cannot be expected to advance the science of medicine, and to raise the tone of the society in which they mingle. Enlarge as much as you please the strictly professional acquirements of the physician and surgeon, but never let them neglect those *literæ humaniores* which *emolliunt mores, nec sinunt esse feros*, and that knowledge of the natural sciences which makes them valuable members of society.

There can be no doubt, that every one entering upon a learned

profession, such as that of medicine, ought to have in the first place a certain amount of literary education. The study of languages, both ancient and modern, of the mathematical sciences, and of mental philosophy, should precede in all cases the professional curriculum. This is to a great extent secured at the present day by the regulations of medical examining boards, and the more fully and completely it can be carried out, so much the better for the medical profession. The Commissioners for Visiting the Universities of Scotland in 1829, make the following statement in their Report:—"It is a matter about which all are agreed, that it is desirable that medical practitioners should be men of enlightened minds, accustomed to exert their intellectual powers, and familiar with habits of accurate observation and cautious reflection. It is also desirable that they should have that degree of literary attainment which will prevent them, when mingling as they must do with mankind in the exercise of their profession, from being looked upon with contempt, or from committing errors in conversation and in writing, for which others would be despised. Because even upon the supposition, that notwithstanding this, they have high professional acquisitions, the law of association will operate, and the conclusion will be drawn, that much confidence cannot be placed in them. This tendency not to confide in him, is one of the most formidable difficulties with which a physician has to struggle; much, unquestionably, of the success of ordinary practice, depending upon the feelings of trust or security with which he is regarded. It is also of importance that a class of men so widely diffused, and mingling so much with society, as the members of the medical profession, should be so instructed as to be able to give a tone to conversation, and to promote among those with whom they associate the love and the pursuit of literary and scientific accomplishments."

"We must not overlook," as our Lord Rector has remarked, "that kind of training in which the subjects learned have for their chief aim, not to inure the hand (so to speak) to the use of its tools in some particular art, but to operate on the mind itself, and by making it flexible, manifold, and strong, to endow it with a general aptitude for the duties and energies of life." Dr Hook has well said, "By a university education we mean a liberal education; and by a liberal education we mean a non-professional education—an education which is to be regarded, not merely as a means to something else, but as in itself an end. But here it will be necessary to explain, that when the word *profession* is used, it is not intended to confine its application to what in former times were called the three learned professions; but we apply it to any calling which requires mental as distinguished from manual labour. The professional man may be compared to a man whose eye is fixed upon a microscope. All the rest of the world is abstracted from his vision; and the eye, though narrowed to a little

hole, sees what is indescribable by others, and by revealing his observations he becomes a benefactor of his kind. Now, all this we not only admit but assert; but then we stand opposed to those who, asserting this, at once conclude that the minds of their children cannot be too soon directed to studies which will bear upon their future vocation in life. The position assumed by the advocates of academical culture is the very opposite of this. They would delay a young man's professional education as long as possible, or rather they would insist upon the importance of the concentrated education being preceded by a liberal education; and they would apply to the training of the man a discipline analogous to that which common sense suggests in what relates to bodily exercise. When in ancient times a father was ambitious for his son, that he might win the prize at the Olympian games or Pythian fields, his attention was directed, not to the technicalities of the game, but to the general condition and the morals of the youth; for the success of the athlete depended upon the fact of his first becoming a healthy man. And precisely so we say, educate the man before you educate the *professional man*; before you send your grain to the mill look to the raw material. How often we see the mere professional man—the man who has not received a liberal education early in life—fail when he is called unexpectedly or in the ordinary course of affairs, to some entirely new situation, or a different order of circumstances." The mind must be disciplined and subjected to culture which will fit it for successful professional study. Every candidate for a medical degree or diploma should therefore pass a literary examination *before* attempting to enter on purely professional work. The General Medical Council recommend that this should be imperatively demanded by all boards. The extent of the examination may vary in different cases—a higher platform being connected with university degrees. In regard to them the requirements laid down by the ordinances of the Scottish Universities Commissioners seem to be sufficient, and the only amendment which might with propriety be proposed, is that logic and moral philosophy should be placed among the optional, in place of the imperative subjects for the degree of M.D. Thus, the subjects positively demanded would be English, Latin, arithmetic, mathematics and algebra, mechanics, and Greek; while two of the following subjects would be taken at the option of the candidate; viz., French, German, logic, moral philosophy, higher mathematics, natural philosophy. In this way allowance would be made for the special tastes of candidates as regards languages, physical science, and mental philosophy. Another improvement would be to allow the preliminary examinations in arts by qualified bodies to have an *ad eundem* value, in so far as they embrace the subjects required by the particular board granting the diploma or degree.

In the early days of our University, it appears that a considerable amount of literary education was demanded from those

who attended the lectures of the medical professors. Thus, we find that Sir Robert Sibbald, who lectured on medicine and natural history in the University, issued the following advertisement in the *Courant* newspaper, on 14th February 1706:—"Quod Patriæ clarissimæ et in ea Philiatris felix faustumque sit. Robertus Sibbald, M.D., eques auratus, Deo auspice, historiam naturalem et artem medicam, quam Dei gratia per annos quadraginta tres feliciter exercuit, docere in privatis collegii incipiet, mensibus vernalibus hujus anni. Monendos autem censet juvenes harum rerum curiosos, se non alios in album suum conscripturum quam qui callent linguas latinas et græcas, omnem philosophiam, et matheseos fundamenta, quod chirographis præceptorum testatum vult."

Having thus considered the requirements in arts, we now proceed to professional study. And here there are evidently two departments—one specially connected with the natural sciences, and the other strictly professional. These two departments should be studied separately; and the collateral sciences, such as botany, natural history, and chemistry, ought to be prosecuted in the first instance,—an examination on these preceding the student's entrance on the second department. The objections urged against natural history sciences have depended chiefly on the fact that they were studied at the same time with purely professional subjects, and that thus the minds of the students were overwhelmed with the multiplicity of objects brought under their notice, and with the necessity of preparing for an examination on one set of subjects whilst they were studying another. Natural history sciences have been considered a hardship, not because the students disliked them *per se*, or thought that the subject was not a good one for their minds to work upon, but because the study of them came at a most improper time, because far too much of it was attempted to be taught in the time, and because the little that they could learn well was what they felt they ought to have learnt in their younger days—which they ought to have acquired before commencing their medical education, and which was not enough to enable them to apply it to practice in medicine or science. The elements of these sciences should therefore occupy the student's attention in the first place, and he should master them, and be examined on them before proceeding further. Those who choose to devote their attention to these sciences more fully, will, no doubt, gratify their taste by continuing to prosecute them afterwards; and they will necessarily be kept up to a certain degree in their subsequent medical studies.

The ordinances which permit the examination in chemistry, botany, and natural history to be taken at the end of the second annus medicus, do not provide for the evil to which we have referred. The candidate should be enabled to pass on these subjects before taking his second annus medicus. If the student commences by attending to botany and natural history in summer,

then taking chemistry in winter, and practical chemistry in his second summer, he ought to be able to pass a satisfactory examination on these subjects in the October following. Thus he would be free during his second winter to prosecute without distraction anatomy and physiology. An examination on these subjects, along with surgery and pharmacy, might take place at the conclusion of the third annus medicus; and the more practical departments would be confined to the final examination, either at the end of the fourth or fifth year.

By a properly regulated curriculum, and a due subordination of classes, the task of the student, as well as of the professor, might be much simplified. The information acquired in one session would prepare the student's mind for that which succeeds; and, the examinations being taken at divided intervals, the mind would not be overwhelmed with a multiplicity of subjects. We would have fewer complaints as to the hardship of scientific examinations, and we would have better-grounded men as graduates of our University. Even by students of arts preparation might be made for examination in sciences during their curriculum—the summer months (at present unoccupied) being devoted to these subjects.

Ever since I began to lecture on botany, I have endeavoured to impress upon my pupils the importance of arranging their studies in the way now indicated. I am glad to say that many have followed my advice to their own benefit, and to the comfort of their examiners. I am delighted to see that of late the matter has been taken up by others, and we may hope that ere long there will be definite regulations issued which will ensure the full carrying out of this desirable object.

In addition to the proper division of lectures and of examinations, there must be assiduous, regular, and systematic study during attendance on lectures. The object of scientific lectures is to exhibit the salient points of the science, to explain its principles, to illustrate by specimens, and to direct the student in his researches, and in his private reading. The fault more or less of all lecturers, and especially of young ones, is to attempt too much, and to enter with too great minuteness into the subject of prelection. They are apt to forget that their object should not be to display their own erudition, but to instruct others in the elements of the science—to induce their hearers to enter heartily into the subject, and to prosecute it steadily at home. Professorial teaching and self-culture must go on simultaneously if any good is to be accomplished. The student who is satisfied with what he hears in the class-room will never be thoroughly grounded. He must make the information thus imparted his own by careful study. Moreover, in science it is not enough that lectures are attended and knowledge acquired by reading, there must be practical working—a handling of the objects of study, and a careful personal examination of the *ipsissima corpora* brought under notice. Hence the value of

demonstrations in the garden, the field, and the museum, and practical lessons in histology. The old saying is true:—

“Segnius irritant animos demissa per aures
Quam quæ sunt oculis subjecta fidelibus.”

In our university there can be no excuse for a student not becoming practically acquainted with the various departments of natural history. Our Botanic Garden and our museums are accessible to every pupil, and the country around Edinburgh holds out a field of study of no ordinary value. Many a candidate has come for examination crammed with book knowledge, but without the slightest power of describing the objects placed before him,—the very objects concerning which he has, perhaps, answered questions correctly.

Another mode of instruction is weekly class-examinations, conducted with the view of ascertaining how far the lecturer has made himself intelligible, and of enabling him to supplement, in a conversational way, what he had failed to communicate *ex cathedra*. Besides these, written examinations conducted once a-month in the class-room are most useful. These I have carried on ever since I began to lecture in 1840, first as an extra-academical lecturer, then as a professor in Glasgow, and, finally, in Edinburgh, and I am satisfied that they have been productive of much good, more especially when they are partly practical,—the student having specimens put into his hand to be examined and described. Certificates founded on the results of these examinations are highly prized by students, and, when carefully adjudged, serve as a good criterion of proficiency. The system of written class-examinations with numerical values attached is now-a-days being generally adopted in our school. For a long time the botanical class was the only one of the medical classes in which such examinations were carried on. Next came the chemistry, under Professor Playfair; and now the practice has become general.

In the *preliminary subjects* of botany, natural history, and chemistry, such examinations, when carried on under the superintendence of University examiners, might with propriety be considered as constituting a part of the degree examination. As regards the other subjects more immediately connected with practice, it seems right that there should be in all cases a general examination in addition. If it were possible to enact that every student should pass a satisfactory examination each session in the classes he has attended before being allowed to proceed further, a great boon would be conferred. Habits of attention, and of regular and graduated study, would thus be fostered, and a check would be put to idleness and procrastination, which are two of the most serious evils in student life.

In carrying on class work, more especially when the pupils are numerous, much benefit is derived from tutorial classes. In this respect our Scottish universities are deficient. The courses of

chemistry, botany, natural history, anatomy, and physiology, would all be improved by having tutors attached to them. These offices, moderately endowed, might be held out as objects of ambition for such of our graduates as preferred to devote themselves to the more scientific parts of medicine. The engrafting of a tutorial upon a professorial system is a subject which deserves attention. The appointment of tutors who shall go on with demonstrations, *pari passu*, with the lecturer, who shall train a limited number of pupils to observe and understand what has been instilled in the class-room, is a measure well calculated to benefit students. Such were the *regents* in the Scotch universities in early times, while the *lector* occupied the place of the professor.

In our Scotch universities the professorial system has always been prominent, while in the English universities a tutorial system has in a great measure superseded the professorial. It is by a proper combination of both that we may expect the best results to be effected. Tutorships might be held temporarily by graduates who wished to devote their attention to special departments of medical science. My colleague, Professor Playfair, has been able, by means of his assistants, to institute tutorial classes. In the department of botany, however, no provision whatever has been made by the University for assistants, and I have therefore to act both as professor and tutor,—delivering lectures daily in the class-room, and giving practical demonstrations and instruction in the garden, museum, and fields.

There is one point to which I desire to call special attention, namely, that a medical degree is not only a qualification to practise, but that it is also a university honour, and the public will naturally expect that our doctors of medicine should be men of higher education than those who merely hold diplomas from colleges. The only direction, it appears to me, in which this superiority can show itself, is in the department of literature and science. It is to our medical graduates that we look for the advancement of science. Many of them are now occupying important scientific positions all over the world, and are contributing in no small degree to the advancement of our knowledge. In the military and naval services, and in our colonies, eminence in science has raised graduates in several instances to places of high responsibility and emolument. Our University has sent many of her alumni to occupy such positions; and at the present moment some of the most important scientific expeditions owe much of their value to Edinburgh doctors of medicine. Among these may be noticed Dr Balfour Baikie, who has superintended the exploration of Western Africa; Dr Hector, who acted as geologist in Palliser's expedition to the Rocky Mountains, and who is now engaged in valuable geological researches in New Zealand; Dr John Kirk, who acted as medical man and naturalist to the Livingstone expedition; Dr Thomas Anderson, now filling with the highest credit the office of superintendent of

the Botanic Garden of Calcutta; Dr Birdwood, filling a similar office at Bombay; Dr Cleghorn, conducting the forest department in the North-Western Provinces of India; Dr Alexander Hunter, ably conducting the School of Design at Madras, and the Horticultural Garden there; Dr Aitchison, advancing the knowledge of Indian botany by his researches; Dr Wallich, publishing valuable treatises on the lower forms of animal and plant life; and many others who are doing credit to their alma mater.

Sir William Hooker, who has most successfully brought under the notice of Government the importance of attaching naturalists to all expeditions, in a letter to me, says,—“I hope that you will encourage young medical men, especially if destined for the navy, to take up botany zealously. I am every now and then asked to recommend such.”

I have thus laid down what I consider to be the true bearings of the natural sciences on medicine. When they are pursued in the manner which I have indicated, they are well fitted to aid the student in his professional work. Their prosecution, in place of being irksome and burdensome, becomes a source of satisfaction and a means of mental improvement.

ARTICLE II.—*Case of Cirrhosis of the Liver with Syphilitic Deposit.*

By D. RUTHERFORD HALDANE, M.D., F.R.C.P., Physician to the Royal Infirmary of Edinburgh.

As the following case presents features of interest both in a diagnostic and a practical point of view, it seems worthy of being recorded.

R. I., a labourer, forty-eight years of age, was admitted into the Royal Infirmary on the 21st of March last, complaining of dyspnœa, and suffering from distension of the abdomen and swelling of the lower limbs.

He stated that he had had a venereal attack, with sores on his penis, fifteen or twenty years ago; but he could give no information as to whether he had suffered from secondary symptoms. His habits had for many years been somewhat intemperate; he usually took about three glasses of whisky daily, but this quantity was frequently exceeded. Two years ago he had an attack of rheumatism, and was laid up for some weeks. Six months afterwards he had a relapse, which, however, did not last so long as the original illness. Since the first attack of rheumatism he has not been so strong as formerly, and has been subject to shortness of breath. Eight weeks ago, while working at Leith Docks, and much exposed to cold and wet, he noticed that his feet were swelled; the following day he observed that his abdomen was enlarged. He had some pain and stiffness across the loins, and some difficulty in

making water; the urine, he thinks, was diminished in quantity, and of higher colour than before. He continued at work for three days, but was then obliged to lay up, and has been unable for any exertion since that time.

On admission the patient's face, neck, hands, and arms, were of a dingy brownish-yellow colour. This coloration he ascribed to having been much in the habit of working with tar, and to having been engaged in steeping wood in a preservative solution. The skin not exposed to the air was normal in colour, but was dryer than natural; there was slight yellowness of the conjunctivæ. There was marked ascites, but without enlargement of the superficial abdominal veins; the lower limbs were œdematous; there was no swelling of the face or upper extremities.

The right side of the chest expanded more perfectly than the left, and percussion over it was more resonant. Respiratory sounds feebler over left than over right side; occasional sibilant rales audible. Over the lower and back part of both lungs coarse crepitation was heard. The apex of the heart beat between the fifth and sixth ribs, on a line below the left nipple. A loud blowing murmur took the place of the first sound at the apex, and was audible, though less distinctly, at the base. Pulse 80, regular, of a somewhat thrilling character. The abdomen was greatly distended by gas and fluid; the ensiform cartilage was tilted forwards. In consequence of the tympanitic distension of the upper part of the abdomen, the hepatic dulness could not be defined. The splenic dulness commenced at the seventh rib, but its lower border could not be made out. The tongue was dry, brownish in the centre, red and glazed at the tip. He was very thirsty; the appetite was good; bowels confined; evacuations of a rather light colour. Urine scanty, about fifteen ounces; amber coloured; containing a trace of bile pigment; density, 1025; reaction acid; deposited no sediment, only a mucous cloud; it contained no albumen.

He was ordered to take bitartrate of potash, in the form of electuary, and was directed to have an anodyne draught at bedtime.

Two days later there was a marked improvement; breathing much easier, and abdomen much less tense. Bowels less confined; 50 ounces of urine had been passed in twenty-four hours, of an amber colour, containing no deposit.

On the 26th, the abdomen had still farther diminished in size, and he breathed freely; the ensiform cartilage had almost returned to its normal situation. Urine continued copious; bowels loose, several watery evacuations daily. Appetite continued fair; strength undiminished; spirits good.

March 30. Owing to a mistake on the part of the apothecary, the patient was for nearly two days without the electuary. In the last twenty-four hours he only passed 20 ounces of urine, which was

high coloured, with a sediment of dark-coloured urates. Breathing continued easy; but cough was rather more troublesome than before, accompanied with muco-purulent expectoration. On the 2d of April, the abdomen was much more distended and highly tympanitic at the upper part. Dyspnœa considerable; urine scanty; bowels confined. He was ordered a turpentine enema, and a drachm of oil of juniper, to be inhaled with steam.

On the evening of the 14th of April, the abdomen was so distended and painful, and the dyspnœa was so extreme, that paracentesis was performed. A trocar and canula of small bore were employed, and 450 ounces of a fluid resembling beer were drawn off. He passed a good night, and was found the following day to be much more comfortable. Pulse 80, of good strength. Œdema of legs had disappeared. The cardiac murmur was of the same character as before the operation. The liver could not be distinctly defined by percussion, owing to tympanitic distension of the intestines; but it could be felt in the epigastrium, and its surface was found to be quite smooth. Its lower margin felt hard and firm. Splenic dulness was found to be increased. There was no abdominal tenderness.

For a day or two after the operation he continued to go on favourably. The quantity of urine, which, before the paracentesis, had fallen to from 10 to 20 ounces, increased to 40, and his breathing was easier. Gradually, however, the quantity diminished, the distension of the abdomen increased, and his strength failed. On the 30th of April, the abdominal distension was as great as ever; but, as he was very weak, and dyspnœa was not urgent, the tapping was not repeated.

On the morning of the 1st of May, he vomited about a pint of dark blood, and died before he could be seen by the house physician.

Post-mortem examination.—Body considerably emaciated. Slight jaundice of conjunctivæ. No œdema of feet.

Left pleura universally and densely adherent. Lung somewhat diminished in size, from imperfect expansion. Right pleura non-adherent. Right lung voluminous; inferiorly and posteriorly congested. Heart was of natural size. Right ventricle contained a moderate quantity of rather loosely coagulated blood. Left ventricle empty; pretty firmly contracted. Valves and muscular tissue of the heart healthy.

The abdominal cavity contained upwards of 400 ounces of tolerably clear yellow serum. The small intestines were distended with gas. The stomach contained a few ounces of dark-coloured blood; the mucous membrane presented patches of congestion, but no breach of surface could be detected. A small quantity of blood, similar to that found in the stomach, was contained in the upper part of the small intestines. The large intestines were empty and contracted. There were no adhesions of the liver to the neighbouring viscera. The liver was of the natural size, and its shape was

little altered. Its surface was generally smooth, though, at a few places, almost entirely on the posterior surface, there were some prominent granulations. The capsule was much thickened,—at some parts so much so as to be almost opaque. The surface of the liver was of an ochrey brown colour, mottled by the presence of numerous dark-green and blackish spots. The liver weighed four pounds; its specific gravity was 1060. On section, the hepatic substance was found to be very dense and tough, and of leathery consistence; it was of a greyish-yellow colour, intermixed with red. The lobules of the liver were very indistinct, but the section presented very little of a granular appearance. The tissue was very bloodless, and had a somewhat waxy appearance, but without the translucency of amyloid degeneration. A good many of the bile-ducts contained dark-coloured bile, at some places so inspissated as to form biliary concretions moulded to the form of the ducts. Slightly projecting from the surface of the liver were a few yellowish-white masses, generally of the size of beans or peas, which presented very much the appearance of masses of malignant disease. Similar masses were found scattered through the substance of the organ. On being cut into, these masses varied somewhat in appearance and consistence,—some being tough, presenting a smooth section, and a slightly glistening appearance; while others were softer, had a slightly granular section, and an opaque appearance. The gall-bladder contained a moderate quantity of thick, dark-coloured bile.

On microscopic examination, a very great excess of fibrous tissue was found to enter into the structure of the liver. It was not generally arranged so as to form spaces or loculi, but was pretty equally distributed throughout its substance. On the addition of acetic acid, the minute nuclei of this areolar tissue were brought into view. The hepatic cells seemed smaller than natural. They had a slightly granular appearance; very few were fatty; in most the nuclei were visible. The firmer of the masses scattered through the liver consisted of minute spherical cells rather larger than pus-globules, and areolar tissue; the softer were composed of granular and fatty matter, and what appeared to be the debris of cellular structures. The colour of the dark spots on the surface of the organ was found to depend upon the presence of biliary matter and finely granular black pigment. Solution of iodine produced none of the peculiar coloration characteristic of amyloid degeneration.

Spleen weighed 18 ounces. Its tissue was rather soft. The kidneys were healthy.

The above case presents some features of interest with regard to the diagnosis of the disease. When the patient first came under observation my impression was that he was suffering from cirrhosis of the liver. The former habits of the patient, the colour of his skin, the presence of ascites, and the apparently diminished size of

the liver seemed to point to this conclusion. Still, the diagnosis was by no means certain. The coloration of the skin received a very natural explanation by his statement as to the nature of his employment; and this explanation was confirmed by the coloration being confined to those parts of the skin which were exposed to the air. The diminution in the size of the liver was no more than a presumption; for, in consequence of the distended, and particularly of the tympanitic condition of the upper part of the abdomen, percussion yielded unsatisfactory results. In fact, in many cases the results of percussion must be accepted with considerable distrust; the hepatic dulness may be markedly diminished, and yet the liver may be no smaller than natural, for it may be so pushed up into the hollow of the diaphragm, behind the anterior portion of the right lung, as entirely to elude physical exploration. At the same time, there were certain points in the case which suggested another explanation of the symptoms than cirrhosis. The patient had had two attacks of rheumatism within the last two years; the dropsy, according to his own statement, had first shown itself in his feet; there was a loud systolic mitral murmur, and the urine, though scanty, was free from deposit. These symptoms pointed rather to cardiac than to hepatic disease as the primary affection. No doubt they might be explained without this supposition. There was no history of an affection of the heart during the attacks of rheumatism. It was not improbable, although the swelling of the feet first attracted the patient's attention, that ascites was the first manifestation of dropsy; but that the distension of the abdomen, being slow and gradual, had for a time escaped his attention; and the statement of Frerichs must be borne in mind that, although ascites usually precedes œdema of the feet, "cases not unfrequently occur, where, quite independently of any complication with diseases of the heart or kidneys, the dropsy makes its appearance at both places simultaneously."¹

The cardiac murmur did not afford absolute evidence of cardiac disease; the sound certainly had its maximum intensity at the left apex, and therefore indicated mitral regurgitation, but the other signs of mitral disease were absent, the pulse in particular being regular and of good strength. Although inorganic murmurs are far more frequently heard at the base than at the apex of the heart, they occasionally occur in the latter situation, and are of what Dr Walshe calls dynamic origin. That is to say, they are produced not by organic disease of the heart, but by some abnormal condition of its action. In order that the mitral valve may close completely, and so prevent regurgitation into the auricle, the walls of the ventricle must contract regularly, and any cause which interferes with the regularity of contraction may lead to imperfect closure, to regurgitation, and consequently to a murmur. A cause of such

¹ Frerichs on Diseases of the Liver; New Sydenham Society. Vol. ii. p. 43.

irregularity of contraction was present in this case in the distended state of the abdomen, which pushed up the diaphragm, and necessarily interfered with the action of the heart. In fact, every clinical observer must have met with cases of cirrhosis of the liver, where a mitral murmur has been present, but where there were none of the other symptoms of cardiac disease, and where, on post-mortem examination, no organic lesion has been present. Finally, the condition of the urine did not throw much light upon the question at issue; for, though scanty, and rather high coloured, as it usually is in cirrhosis, it was free from the deposits of dark-coloured urates, which are usually met with in that disease. I accordingly satisfied myself with an alternative diagnosis, although inclined to regard the case as one of cirrhosis.

This opinion, however, was a good deal shaken by the effect of treatment. Under mild diuretics the quantity of urine rapidly increased, and although several loose stools were passed daily, it very soon amounted to 50 ounces, and was of perfectly healthy appearance. Such a result of treatment is very unusual in cirrhosis of the liver. In this disease there is such a degree of congestion of the branches of the portal system that absorption takes place with great difficulty, and that diuretics seldom produce any increase in the flow of urine. As Dr Parkes remarks, "The lessened amount of urine is so constantly indicative of hepatic obstruction, that a copious or even natural flow is a strong argument against the existence of any material amount of congestion or cirrhosis."¹

Another point worthy of remark regarding the condition of the urine at this time was the absence of any deposit of urates. A deposit of dark-coloured urates is generally observed in connexion with cirrhosis of the liver. The deposit is due in great part to the scantiness and consequent concentration of the urine; while the deep colour depends upon the presence of abnormal pigments, which chemical analysis has shown to be rich in carbon. The exact relation between the presence of these pigments in the urine and the existence of disease of the liver is unknown; but the fact that the two conditions very frequently co-exist is a fact of much clinical importance.

As the quantity of the patient's urine increased, the symptoms occasioned by the abdominal distension diminished; and as I had never previously seen such a marked amelioration in a case of cirrhosis, I began to hope that the disease was of a less serious nature than I had apprehended. I had little doubt that there was some hepatic affection, but I began to hope that this was chiefly congestion secondary to cardiac disease, and that the good effect of the diuretics was to be explained by the bitartrate of potash having acted as a purgative, having removed the congestion of the liver, and thereby permitted increased absorption to take place.

The improvement, however, was of short duration. Coincidentally with the accidental discontinuance of the diuretics, the quantity

¹ The Composition of the Urine in Health and Disease, p. 324.

of urine suddenly diminished, and subsequent treatment had no effect in increasing it. At the same time a deposit of dark-coloured urates made its appearance. In consequence of the increasing distension and aggravated dyspnoea, paracentesis became necessary, and gave temporary relief. The day following the operation a more satisfactory exploration of the abdomen than any former one was possible. Though the hepatic dulness could not, owing to the tympanitic distension of the intestines, be accurately defined, the surface of the liver could be felt in the epigastrium, and was recognised as being quite smooth. This indicated that there was *probably* no great diminution in the size of the organ, and *certainly* that the surface was not in the granular or hob-nail condition. The firmness and hardness of the margins indicated the existence of induration of the hepatic substance. The splenic dulness was at the same time found to be extended.

I was now pretty well satisfied that the case was essentially one of cirrhosis or induration of the liver. It is, however, worthy of remark, that the relief given by the paracentesis to the play of the thoracic organs produced no change in the cardiac murmur. From this time the progress of the case was such as is commonly observed in cases of cirrhosis. Paracentesis gave temporary relief to the symptoms, and after it the flow of urine was for a short time increased; but the relief was of short continuance; the fluid speedily re-accumulated, and the patient's strength rapidly declined. The immediate cause of death was the occurrence of hæmatemesis, owing to rupture of some of the congested gastric veins, a mode of death which I have observed on two or three other occasions.

Regarding the post-mortem appearances I have but little to say. The heart was found healthy in structure, and the murmur heard must therefore have been of dynamic origin. The liver was found in what Frerichs calls the condition of simple induration. This condition is essentially the same as cirrhosis: the causes and symptoms are the same; the only difference being, that in the former condition the fibrous tissue is infiltrated pretty uniformly through the hepatic tissue, while in the latter it surrounds lobules and groups of lobules, leading to the nodular or granulated condition of the organ.

One or two other points in the condition of the liver seem worthy of notice; the first was the presence in the gall-bladder of a good deal of thickened bile, and the existence in many of the bile-ducts of inspissated bile, actually constituting in some places biliary concretions. In most cases of cirrhosis, on the other hand, the bile is thin, and of pale colour. The reason of its different appearance in the present case appears to be that, as mentioned in the report of the microscopic appearances, the remaining hepatic cells, though rather small, seemed healthy; probably, therefore, a considerable quantity of bile was secreted; but as from the pressure on the bile-ducts there was an obstacle to its discharge, it was retained so long

as to become inspissated, or even to be converted into a solid material. Another point to be noticed, is the presence in some parts of the liver of finely granular black pigment. An accumulation of bile-pigment, in the form of yellow or orange granules, is of constant occurrence; but the presence of black pigment, exactly such as is found in the "pigment liver," is of rarer occurrence. It is doubtless due to changes on the colouring matter of the blood which has stagnated in the congested vessels, or been extravasated into the tissues.

Finally, it was mentioned that numerous masses of adventitious matter were found scattered throughout the substance of the organ. These, from their general appearance and microscopic characters, I believe to have been of syphilitic origin. Some of them presented an appearance almost identical with what I have met with in a case of syphilitic deposit in the substance of the heart.¹

ARTICLE III.—*Notes of Interesting Cases in Surgery.* By J. FAYRER, M.D., Surgeon, Medical College Hospital, Calcutta.

Lithotomy.

A BENGALLI Brahmin boy, named Prionath Moitro, aged 9 years, was admitted, on the 28th May 1863, with symptoms of stone in the bladder. His father had been bringing him to the hospital frequently during the past week, with retention of urine, œdema of scrotum, and other symptoms indicative of stone. On passing a sound at different times a stone was detected, sometimes in the bladder, sometimes projecting into the urethra. The urgency being great, this morning the father left his son in the hospital, and consented that an operation should be performed.

I accordingly, the same day, having placed the child under the influence of chloroform, removed the calculus by an incision in the median line, behind the scrotum. It was partly in the urethra, and was removed with a pair of small forceps, without the necessity of dilating the prostate. It was a mulberry calculus, about the size of an almond, weighing 21 grains. There was very little hæmorrhage. No tube was introduced.

On the following morning, I found a large collection of urine in the bladder, the wound having closed temporarily. On passing a catheter, a quantity of muco-purulent urine escaped. He had at the same time considerable œdema of the scrotum. Ordered him to have a dose of oil, warm fomentations, and the following medicine.—℞ Liquor Am. acet., ℥iv; Tr. hyoscyami, ʒss.; Liquor. Potas., min.xx.; Aquæ, ℥iv.; M. Coch. Med., 4ta quaque hora, with plenty of diluents.

¹ See this Journal for November 1862. Vol. viii. p. 435.

On the 31st May, he was doing very well, the wound rapidly closing; œdema of scrotum gone.

On the 10th of June, he was discharged cured.

There is nothing remarkable in this case; but it shows that the median operation is well adapted for small calculi. The stone was just too large to be voided by the urethra, and from the constant retention of urine and irritation it had caused, the boy's life was endangered. It was only when the urgency arising from retention of urine became very great that the father could be prevailed on to leave his child in the hospital, and apparently only just as œdema of the scrotum, and acrid purulent urine, with fever, indicated that serious mischief was commencing. He left the hospital relieved from all these symptoms in fourteen days.

CASE II.—A Bengalli child, aged 2 years, was brought to the hospital by his mother, on the 6th July 1863, said to be suffering from retention of urine. The child looked strong and healthy. Prepuce considerably elongated, but no other indication of suffering.

On passing an instrument I found a calculus in the urethra just above the scrotum. In attempting to push it further back into the perineum, it slipped into the bladder. I cut the child in the median line, and, whilst operating, the stone came forward towards the incision, and was removed. It was rough and fawn-coloured, of the size of a small bean. There was no hæmorrhage.

The following morning, I found the little fellow very well. The urine passing by the urethra; none by the wound. He continued to do well, and was discharged on the 18th July. No urine passed by the wound at any time after the operation. He was thirteen days in hospital.

The rapid healing of the wound, and the passage of the urine entirely by the urethra, are worthy of remark.

CASE III.—A healthy-looking little Brahmin boy, aged $3\frac{1}{2}$, named Soorender Chunara, was admitted, on the 8th of July 1863, with symptoms of stone in the bladder. On sounding, the point of the sound came in contact with a rough calculus, apparently lying just behind the pubes. The concave side of the end of the instrument seemed to impinge on it. He is said by his father to have been showing symptoms of stone for more than a year, but only lately with much pain. I examined him by the rectum, but could gain no information as to the size or position of the stone.

The boy being in good health, and his bowels having been freely moved, I operated without delay. The incision was made in the median line, in the manner recommended by Mr Allarton. The membranous portion of the urethra being opened by a grooved staff, a long probe was then passed into the bladder, which had been emptied during the administration of chloroform and the introduction of the staff; and I dilated the opening by slowly introducing and rotating my finger. I could feel no stone either with finger or instrument, and after protracted efforts, in which the boy lost more

blood than was desirable, I was reluctantly obliged to desist, and put the patient back in bed, with the stone still in his bladder. He was very low when removed from the operating theatre, and I had much anxiety, from the loss of blood and manipulation he had undergone. He suffered, however, very little. The next day, I found him feverish; but the urine was voided freely through the perineal wound. A day or two after, the friends being tired of remaining in hospital, took him away, promising to bring him frequently to be seen by me at the hospital.

I made two different attempts at different times to extract the stone, but failed. I could feel it behind the symphysis pubes with the point of the instrument as it passed into the bladder, but I could not get hold of it. In the meantime the boy improved in health, losing all the painful symptoms he had before coming first to the hospital, but with a constant dribbling of urine from the perineal wound.

On the 6th August, I again attempted, and succeeded in removing the calculus. The wound in the perineum had contracted to a small sinus, through which all the urine escaped. I passed a sound into the bladder, and found the stone in its usual place. I then entered a grooved staff into the bladder through the wound, and divided freely towards the rectum, but not injuring it. I then introduced my finger along the staff into the bladder, and after rotating it, and freely dilating the prostate, I touched the stone, which seemed to be held behind the pubes, and projecting down just in a line with the arch of the pubes. I then introduced a pair of long, narrow forceps, and, depressing the handle, was enabled to grasp the edge of the stone, which, being very friable, crumbled under the slight pressure. I again grasped the stone, and with much difficulty removed it. It seemed to be perfectly adherent, and as though, when it came away, it was bringing the mucous membrane of the bladder with it. I should think that if ever union of any kind does take place between a rough calculus and an organic structure like the mucous membrane of the bladder, it was so in this case, though possibly it might have only been encysted.

The calculus was round, compressed, very friable, and rough, consisting of urate of ammonia, and weighing 50 grains, of a greyish fawn colour, about the size of a large filbert were that fruit compressed. He lost a good deal of blood again at this operation, and was very low and weak for some time after it. Next morning, I found him cheerful, free from pain, and looking much better; the urine flowing freely from the wound. His friends took him home the same day. On the tenth day, they reported that he was doing very well. On the fourteenth day, they brought him to the hospital; the urine passing entirely by the urethra, and the perineal wound nearly healed. Three or four days later, they brought him perfectly well.

This was an exceedingly interesting case, not only from the

remarkable recovery the boy made, after so much manipulation and distension of the parts in the attempts to remove the stone, but also from the position of the stone itself, and the great difficulty experienced in extracting it. I have before met with cases of encysted or adherent calculi, but never experienced so much difficulty in their removal. I protracted the attempts to remove it on the first occasion in this case to the extreme limits of safety, and I had considerable apprehension that he would suffer from infiltration or cellulitis from the violence inflicted; but he had not a single bad symptom, and when similar proceedings, more successfully instituted, on a subsequent occasion, resulted in the removal of the calculus, he recovered, although taken out of hospital to his native home, rapidly, and without a bad symptom of any kind in a few days. The median operation certainly is admirably adapted for the removal of small calculi; but for large ones I doubt its advantage over the lateral, which in this country is so very successful. I can hardly conceive that in the laceration and distension which must occur in dragging a large calculus through the undivided prostate, the seminal ducts can escape injury; such injury might have most serious results.

CASE IV.—A Bengalli boy, aged 11, named Kedar-Nath Bysack, was admitted, on the 6th August 1863, with symptoms of stone, from which he had suffered for three years. On sounding him, the stone was immediately felt and heard.

The following day, his bowels having been opened by a dose of oil, and the rectum washed out by an enema, I removed the stone by the lateral operation. In this case I preferred the lateral operation, as I had some doubts as to the exact size of the stone, and because I have found that in ordinary cases it is most simple and successful.

The after progress of this patient was satisfactory. The urine began to flow by the urethra on the 10th, and the wound gradually contracted, and was nearly closed when his father took him home on the 19th August, fourteen days after the operation. The calculus was oval, smooth, uric acid, coated with phosphates, about the size of a thrush's egg, weighing 270 grains.

Removal of a Splinter from the Fore-arm; Ligature of the Radial Artery.

6th July.—A Brahmin, named Tincowrie Mookergea, aged 25 years, of healthy, well-developed frame and constitution, presented himself, complaining that four days ago he had fallen when walking in a jungle-path in the dark, and that some sharp object had penetrated his arm. I found a small discoloured spot, not large enough to admit a probe, on the anterior aspect of the left fore-arm, in the muscular part of the limb, just at the junction of the middle and upper thirds. It lay over the course of the ulnar artery. There was no swelling of the arm, but there was a blush of redness

round the puncture, and the least movement or pressure of the arm caused much pain. He insisted that the thorn was still in the arm, so I made an incision, and examined carefully under the fascia and among the superficial muscles. Not finding it there, I pursued the investigation, making the incision deeper, close by the side of the radial artery, as it was in that direction the foreign body seemed to be. I found it close to the interosseous membrane, my finger coming in contact with the blunt end. With some difficulty I extracted the spine of a palm leaf, or a thorny splinter, about an inch and a half in length, very sharp and spiny at the point. Its removal was followed by slight arterial bleeding, which ceased readily on pressure. The arm was bound up, and he left the hospital.

The following day, he returned with the arm a good deal swollen and painful. He remained in hospital.

9th July.—Much swelling and suppuration, but less pain. Poul-tices and salines.

10th.—Less pain; suppuration free.

11th.—Much better. Dress with water-dressings.

16th.—Discharge still rather profuse, but the wound is healing.

17th.—I found the arm much swollen, hard, and painful. Pro-fuse discharge of red pus. On introducing a probe it was followed by a violent arterial jet. The arm continued to swell, and I found that the ulnar pulsation had stopped. As the spine had taken an oblique direction, I thought it had injured the artery in passing, and thus the result was secondary hæmorrhage. I immediately made an incision through the muscular part of the arm, which I found stuffed with blood, and with some difficulty exposed the ulnar, which turned out to be uninjured. It was not the interosseous, but the radial itself which had given way. I tied both ends of it, cutting across the arm from the first incision to get at it, and the bleeding ceased. It is to be observed that before the operation the radial pulsation was distinct, the ulnar quite extinct. The explanation of this no doubt is, that the aperture in the radial was small, and that the ulnar was compressed by the quantity of effused and clotted blood I turned out of the fore-arm. I found after the operation that the ulnar pulse had completely returned, whilst the radial was totally stopped. The wound was brought together with wires, and the patient placed in bed with his arm at rest on a pillow. At 3 P.M. (the operation was performed about 8 A.M.), I found him quiet. There had been no return of hæmorrhage, and now the radial and ulnar pulses at the wrist were both distinctly felt. He had slight fever, and the arm subsequently inflamed and suppurated freely.

21st.—Ligatures came away; suppuration diminishing; general health improving. He was discharged on the 9th of August, the wound almost cicatrized, and with a very good arm: there was a depression in the cicatrix, corresponding to part of the muscle lost

in the slight sloughing that resulted from the incision and manipulation in search of the spine. The pulse of both radial and ulnar arteries at the wrist was distinct.

This case is interesting in several points. The fact of the thorn having insinuated itself so deeply, lying, as I found it on the fourth day, near the interosseous membrane; the injury it had probably inflicted on the artery causing secondary hæmorrhage by ulceration of the vessel; the arrest of the ulnar pulsation by the effused blood; its restoration after the clots had been cleared out. The pulsation of the wounded radial was completely arrested, of course, by the ligature, but the complete re-establishment of the radial pulse at the wrist so soon after the ligature is worthy of remark. The rapid and perfect closing of so severe an injury as that caused by the puncture of the thorn, the incision in search of the bleeding vessels, and the separation of the muscles during these operations, are also not devoid of interest.

Strangulated Hernia.

Within the past year, I have had eight cases of operation for strangulated hernia; and as they are interesting, I append notes of each.

In a former notice of this subject, in the "Indian Annals," I remarked that the natives of this country appear more prone than the European to pass into a state of gangrene when suffering from strangulated hernia, and that, consequently, the surgeon should bear in mind that early operation may be necessary to save life, even when the symptoms would hardly lead the inexperienced observer to apprehend that the danger was so imminent.

The axiom, "When in doubt, operate," is even more applicable to strangulated hernia here than in England; and to those who have had the opportunity of seeing how insidiously in some cases the gut sphacelates, it becomes of greater significance, as a rule of practice, than might be supposed. It too often, however, happens that the cases are brought to hospital when strangulation has so far advanced as to leave no doubt that the operation is the only remaining chance, if indeed there be yet time, of saving life.

Another point in reference to this accident is worthy of notice. The almost invariably thickened state of the scrotum, tunica vaginalis, and hernial sac, combined with enlargement of the testicle and hydrocele, in the natives of Bengal, frequently give rise to troublesome suppuration and collections of pus in the scrotum after the operation, exhausting the patient, or inducing a pyæmic state, from which recovery is most tedious, if it be ever effected at all. The tendency to suppurative inflammation in the scrotum and sac, is no doubt aggravated by the squeezing and manipulation of prolonged taxis; and therefore it is another good argument for early operation. I now most carefully avoid unnecessary manipulation of the scrotum in attempting to reduce the hernia, before having recourse to operation.

My conviction is, that when symptoms of strangulation have become well developed, if the hernia is not reduced when the patient has been brought fully under the influence of chloroform, has had enemata, and the taxis judiciously applied, the sooner the operation is performed the better. Here, as elsewhere, in old and large herniæ, greater latitude may be allowed, and further delay permitted, than in recent cases. But I am satisfied there is more danger in delay than in early operation. I invariably avoid opening the sac if I possibly can, and I feel sure that it is the safest mode of dealing with these cases.

CASE I.—A stout healthy Hindoo peasant, aged 30, was admitted on the 17th of August 1862, with a large oblique inguinal hernia on the right side. He has had it for three years. It used frequently to ascend into the scrotum, but hitherto he has been able to return it without much difficulty. The scrotum, sac, and tunica vaginalis were all hypertrophied.

The hernia had been down seventeen hours when admitted. He was in great pain; the bowels obstinately constipated, and vomiting frequent. There was great pain in the umbilical region, and also at the external ring. Knowing the tendency to rapid and sudden sinking from strangulation of a hernia, I proposed immediate operation,—the taxis, under chloroform, and administration of enemata, having failed to give relief. The stricture was at the external ring. I divided it freely with a probe-pointed bistoury. The sac was not opened, and the hernia returned without difficulty. The wound was brought together with wires, and a dose of opium (gr.ii.) given.

The following day, he had symptoms of peritonitis, intense pain on pressure, rapid pulse. Being a strong and vigorous peasant, I took $\text{ʒ}xii.$ of blood from his arm, ordered him gr.iss. of opium every four hours, and frequent fomentations to the abdomen. I very seldom take blood from the arm, but did so in this instance to relieve pain, and render him more susceptible to the opium. It certainly so far had a good effect, but it probably tended subsequently to retard his recovery, his convalescence being protracted. However, the loss of twelve ounces of blood cannot be of serious importance, and if it relieve pain, it is, in a case of this kind, beneficial. I had no idea of cutting short or influencing the inflammation beyond this, and I daresay the patient would have done very well without bleeding, but he certainly was relieved by it from the exhaustion of acute pain. The next day, he was better; the peritoneal inflammation gradually subsided under the influence of opium and fomentations. On the 20th, his bowels responded freely to an enema of warm water; a quantity of feculent matter was voided. The bowels, after this, acted regularly without such assistance. The scrotum about this time began to swell, became tense and painful, fever came on, fluctuation in the sac followed, and a discharge of serous ichor from the operation wound, which had nearly

closed. Free suppuration took place in the sac. Counter-openings were made in the scrotum, from which a profuse discharge went on for many days. Long after the bowels had become quite regular, and all peritoneal irritation had ceased, he remained in a state of extreme debility from the profuse suppuration in the sac and scrotum. He recovered, under the influence of good food, wine, quinine, and other tonics. The discharge gradually ceased, the openings closed, and he was discharged convalescent on the 11th of September. He returned to the hospital after a few weeks perfectly restored to health and strength.

This case illustrates two points,—the advantage of early operation, and the tendency in the scrotum, or rather the irreducible hernial sac, to suppurate after the operation.

CASE II.—A spare, sickly-looking Hindoo, aged 30, was admitted on 5th September 1862, with symptoms of strangulated hernia of the right side. The hernia was of long standing. It had been down on this occasion seven days, and he was said to have had great pain, with constipation and vomiting, for the last five days. He was very low; skin cold; pulse thready, 120. Constantly vomiting faecal matter, like the evacuations of diarrhoea; the abdomen tympanitic and painful on pressure. The tumour was about the size of a swan's egg, very painful on pressure, especially towards its neck.

The operation was performed without delay. The stricture was found to be within the sac, which was opened; a thickened band of tissue, as well as the external ring, which also formed part of the stricture, divided. The omentum was found protruding, congested, and bleeding with the slightest touch. It was firmly adherent to the sac, which was also irreducible. Behind the omentum was a knuckle of small intestine of about six inches in length, much inflamed, and covered with lymph. It was closely adherent to the omentum, from which it was separated by breaking down the recent adhesions, and then returned within the abdomen. The omentum was so thoroughly adherent to the sac, and the sac to the scrotum, that it could not be detached without much laceration and hæmorrhage. The omentum was therefore left in the wound, the edges of which were brought together as nearly as possible. He was very low after the operation, and shortly after it vomited some stercoraceous matter. His bowels also acted soon after the operation, and he expressed himself much relieved.

The following day, I found that tympanitis had subsided; bowels had acted again; vomiting and nausea entirely ceased. There was slight abdominal tenderness, especially about the wound. Ordered a grain of opium every four hours.

He continued to improve for a few days, when symptoms of mischief about the protruding omentum and sac set in. Diarrhoea also continued, which reduced his strength rapidly. His pulse became quicker, and his skin hotter, with constant hiccup. The

protruding omentum looked healthy on the surface, pus oozing from about its margin, evidently collections forming in the sac and scrotum. Counter-openings were made to give exit to the pus. Bed-sores began to form, and diarrhœa became more frequent. He grew very restless and wandering on the 22d, and on the night of the 23d September he died.

The post-mortem examination is worth recording. *Abdomen*.—Peritoneum and omentum natural, except where the latter protruded. It was firmly adherent to the sac, which was in a state of suppuration, and the inferior portion sloughing. The sac was inseparable from the tunica vaginalis. The intestine had some red patches on the portion that had protruded, and a small quantity of lymph lay on the peritoneum, just about it. The mischief in the sac had stopped abruptly at the seat of stricture. *Kidneys*.—Healthy. *Liver*.—Rather large; deeply congested; contained no pus. *Large Intestines*.—Up to cœcum, healthy, but very anæmic. *Small Intestines*.—About six feet slit up; mucous membrane softened, and covered here and there with patches of grey superficial ulceration. No redness or congestion, except at the seat of protrusion. Intestine contained thin feculent matter. *Thorax*.—Both pleuræ, especially the lower part, plastered over with yellowish-grey plastic lymph. Upper portion adhering by recent but firm adhesions. *Lungs*.—Pale in front, with patches of discoloration. Did not collapse on opening the thorax. Posterior portion of both intensely congested. Several well-marked patches of lobular pneumonia. The lungs, especially the right, studded with small abscesses, from the size of a pea to that of a marble; patches of grey, sloughy-looking lung-tissue, in some cases surrounded by pus, in others by a dark areola of congestion,—all, no doubt, different stages of breaking down of the lung-tissue.

In this case there had been no symptom of pyæmia beyond the quick pulse and feverish heat. The day before his death he complained for the first time of pain in the right shoulder, but he attributed it to position. He had no cough, nor was the respiration hurried, so as to attract attention to the thorax. Diarrhœa apparently was the cause of death.

CASE III.—A Jew, aged 40, named S. Cohen, admitted 14th September 1862, with a large inguinal hernia of the left side. He had a combination of hernia, thickening of the scrotum, enlargement of the testicle, and hydrocele. The hernia had been liable to descend for years, but hitherto he had been able to return it. This morning it descended about 7 A.M.; he was unable to return it, and soon after symptoms of strangulation set in. There was great pain at the seat of constriction at the external ring, intense pain also about the umbilicus; nausea and vomiting. At 2 P.M. I saw him. Chloroform, ice, warm baths, enemata, had all been tried without any benefit. The pain and urgency were rapidly increasing.

He was a spare, unhealthy-looking man, and much depressed.

I brought him under the influence of chloroform, and proceeded to operate. The stricture was at the external ring. I divided it with a blunt-pointed bistoury, and returned the hernia without opening the sac; a few wire sutures, pad, and bandage were applied, and two grains of opium given.

There is nothing to remark in the after condition or treatment of this patient, except that the wound united by adhesion, and that he never had a bad symptom. The bowels acted freely on the 17th, after a tepid-water enema. He continued to do well, and was discharged cured on the 29th September, having been fitted with a truss, for the hernia had again protruded. I proposed to complete the treatment by operation for the radical cure of the hernia, but he was charmed with his truss—the first he had ever had—and would not wait longer in hospital. I saw him many months after, in good health.

CASE IV.—A stout, healthy-looking Hindoo, aged 50, was admitted on the morning of the 1st November 1862, with urgent symptoms of strangulated inguinal hernia of the right side. He had suffered from hernia for about a year, but it had not troubled him much until lately, when it began to increase in size, and came down more frequently. On the day before admission, it came down when he was walking; he was unable to return it, and soon after symptoms of obstruction and strangulation came on. Pain, griping and tormina, especially in the umbilical region; tympanitis, vomiting, and great depression, in which condition he was admitted. When I saw him, the usual methods of reduction had been tried. I did not deem it desirable to prolong these efforts. The tumour was very tense, the symptoms rapidly becoming more urgent, and the patient calling loudly for relief.

I operated under chloroform. Much fat and cellular tissue were cut through, three considerable arterial branches tied, and the stricture found high up in the canal at the internal ring; I divided it with a blunt-pointed bistoury straight upwards, and then with some trouble returned the hernia, which was of a good size, without opening the sac, which was irreducible. At 5 P.M., I found him much relieved; bowels had acted three times; he had vomited several times after the operation, but the pain had almost quite subsided. Pulse 80, soft. He had also passed urine three times. Had two grains of opium after the operation; repeated it, and continued the fomentations. Milk and sago diet.

2d November.—Slept well; pain diminished. He is better in all respects.

3d.—Had a good deal of pain about the wound and on the right side of abdomen. The skin had a brawny hardness and an erysipelatous blush. No general peritoneal pain. Bowels have not acted again. Vomiting had quite ceased. Opium, gr.i. every four hours. Fomentations, and Sol. argent. nit., ʒi. ad ʒi., to be applied to the inflamed skin.

4th.—A good deal of pain in, and purulent discharge from, the wound. Pulse 120; tongue dry; no peritoneal pain. Bowels had acted freely by aid of a simple enema. Repeated enema. Applied a poultice. Discontinued the opium.

5th.—Not doing well. I found him low; pulse rapid and intermittent; no abdominal pain, but much tympanitis; breathing hurried; foetid, dark discharge; integument round the wound emphysematous; the sac visible at the bottom of the wound, which was gaping, black, and gangrenous. Ordered ether, brandy, and ammonia frequently. Fomentations to abdomen. Bowels to be relieved by an enema. He died on the 5th, at about 5½ P.M.

In this case gangrene of the sac was evidently the cause of death. He had thickening of the scrotum, tunica vaginalis, and sac, with enlarged testicle. He had formerly suffered from double hydrocele, but had been treated by injection of iodine. The parts had been much squeezed and manipulated in attempting to reduce the hernia. Before he came under my care, there was no sign of serious peritonitis; nor did the symptoms after operation indicate that any stricture remained within the sac. The mischief was confined to the scrotum, sac, and integuments of the abdomen.

No post-mortem examination was obtained, as the body was removed by the friends shortly after death.

CASE V.—An old Hindoo from the Deccan, about 65 to 70 years of age, was admitted on the 27th December, with symptoms of strangulated inguinal hernia of the left side. The bowels were constipated; he was vomiting frequently; had great pain about the umbilicus and neck of the tumour. Pulse rapid and feeble. The usual efforts had been made, and repeated under chloroform, to reduce it, but without success. He is said by his companions to have had hernia for about a year; that it has been irreducible for six days, and that the present urgency has at last brought him to hospital. I put him under the influence of chloroform, and operated. The tissues were very loose,—a director was almost needless. Having exposed the sac, I divided the external ring where the stricture appeared to be seated, but was unable to reduce the hernia. The symptoms were urgent. I opened the sac, found it much thickened at the neck, which I had to slit up to enable me to return the gut, which was also much thickened. In reducing the intestine, its peritoneal covering, which was apparently softened, split, exposing the muscular fibres of the gut. A quantity of dark red scrous fluid escaped from the sac when it was opened. The constriction seemed to be in two places of the neck of the sac, at the external and internal rings, and all this I laid open. The gut, though much thickened, inflamed, and smeared with lymph, was not gangrenous. Ordered gr.i. of opium to be given every fourth hour.

28th December.—In less pain; vomiting has ceased, but there is hiccup. Bowels have not acted yet, but they seem inclined to do so. Ordered chloroform and ether to stop the hiccup; a warm-water

enema to relieve the bowels; the opium to be omitted, as there was no pain. The skin was cool and moist; tongue clean; pulse 96.

29th.—Tongue coated and dry; some pain about the wound; bowels have been freely relieved; hiccup better; pulse 96, and feeble; he looks low. The wound appears to have united in great part by adhesion.

31st.—Very weak; pulse feeble; wound partly healed, but from one end of it there is a sanious discharge. Tongue dry; hiccup occasionally; slight abdominal tenderness. Bowels again freely relieved. He has had milk, and animal broth, with a little port-wine. He appeared to be sinking from debility, and opium was ordered to procure rest and sleep. He gradually sank, and died on the 2d of January.

No post-mortem examination could be obtained, as the body was taken away by the friends. He was a very feeble old man, and death appears to have resulted from exhaustion.

CASE VI.—A Hindoo, aged 50, was admitted, on the 20th March 1863, with symptoms of strangulated inguinal hernia. He had had hernia for five years. It had been frequently down in the scrotum, but hitherto he had been able to reduce it himself. He had been suffering for some time. When admitted, he had great pain in the tumour and umbilicus. I found him rolling about on his bed, vomiting frequently, and calling loudly for relief. The enema, inversion, ice to the tumour, taxis under chloroform, were all tried without effect; and as the symptoms were becoming more severe, I did not think it right to defer the operation. The tumour was about the size of a child's head; it was very tense, and excessively painful.

I operated when he was under the influence of chloroform. The stricture was at the external ring; this being divided with a little pressure, the hernia was reduced without opening the sac. He had gr. ii. of opium after the operation.

There is nothing remarkable in the after-treatment or progress of this case. He had considerable suppuration, and once or twice slight hæmorrhage from the wound; but he did very well on the whole. The wound cicatrized, and he was discharged cured on 2d May, having been forty-four days in hospital. He was fitted with a truss. Being anxious to get away, he would not wait and undergo the operation for the radical cure of his hernia.

CASE VII.—I was asked to see an old Hindoo Brahmin gentleman, aged about 68, on the 18th of June last, in the evening. He was said to be suffering from hernia. I found him with a moderate-sized scrotal hernia of the right side, which he said he had had for many years, but which until now had never caused him any severe suffering. It descended into the scrotum, and began to give him pain about 9 A. M. of that day. He had been constipated, and this was followed by violent pain, vomiting, and depression,—the condition in which I saw him. The pain at the neck of the tumour

and in the umbilicus was very intense. He had had enemata; the taxis, and all the usual means of reducing a hernia had been tried without avail. I repeated the attempt without better success, and immediately recommended operation, which was at once acceded to. I found a tight stricture at the external ring, which I divided without opening the sac. I thought it probable, although I could not then return the hernia after dividing the stricture, that the cause being removed, the symptoms of strangulation would cease, and under the influence of ice and the recumbent posture, that the protrusion would return of itself, provided there were no adhesion in the irreducible sac. I therefore determined to wait for further symptoms before opening the sac. I should note that the neck of the sac felt very thick and rigid, rendering it probable that there might be obstruction there.

The operation was performed between 4 and 5 P.M., and I saw him again at 9 P.M. The symptoms had abated, but still they were there. I then opened the sac, and found a knuckle of intestine, with omentum, tightly compressed by the elongated bottle-neck-shaped neck of the sac. This I slit up; it was thick and tough. The intestine was of a deep purple colour; I almost feared too far gone. However, as it had not quite lost all appearance of vitality, I returned it with the omentum. A quantity of dark bloody serum escaped. Gave him a grain of opium directly after the operation, and ordered fomentations to the abdomen.

19th June.—All symptoms of strangulation gone. Tongue rather dry; pulse between 90 and 100. No pain. Continue the opium, a grain at bedtime.

20th.—He slept last night. Not much pain, except just about the wound. Continue the opium, one grain every six hours, and fomentation. Let him have a tepid-water enema.

21st.—Bowels acted freely in the night several times; so much so that his medical attendant gave him something to check the action. Very little pain, even of the wound, which has almost entirely united by adhesion. He said he was very hungry, and asked for food. Ordered him some broth and port-wine, arrowroot and sago.

22d.—He is weak, and the bowels are loose. No pain, and the wound appears to have healed. He has had gallic acid and Dover's powder to arrest what has now become diarrhoea. He has been slightly feverish.

23d.—Only two motions in the night. Pulse 100; no pain; wound healed. Let him have a little quinine.

24th.—He was free from pain and diarrhoea, but had sharp pain during the night. Let him go on with the quinine when free from fever.

25th.—He had diarrhoea again to-day, and fever during the night. There is also slight oozing of purulent matter from the lower corner of the wound, which has opened again where the

suture was. There is a patch of erysipelatous redness over the right iliac region, extending round to the back. I recommended sol. argent. nit. to be applied, and a poultice over the wound, and some port-wine and soup. Quinine and decoct. cinchonæ.

27th.—He was doing badly. Tongue dry; skin hot; pulse 130. Fluid and gas issuing from the wound, with a distinctly fœcal odour, indicated the cause of the mischief to be that the gut had given way, and that he was sinking. It is remarkable that the gut should have preserved its vitality or its continuity so long, probably until three days before death, when the typhoid symptoms set in. He sank that night.

No post-mortem examination could be obtained.

CASE VIII.—On the 28th August 1863, a Hindoo shopkeeper, about 38 years of age, was brought to the hospital with symptoms of strangulated hernia. He had suffered from inguinal hernia of the right side for twenty-two years, which had frequently been down, and more than once had given him trouble from the difficulty of reducing it, but until this occasion it does not appear that it had ever been strangulated. It came down early in the morning, and symptoms of strangulation rapidly set in. Constipation was followed by nausea and vomiting, with great pain in the abdomen, especially the umbilical region, and in the neck of the tumour, which was about the size of an infant's head.

The usual means for reduction were had recourse to, and having failed, I operated at about 3½ P. M. of the same date. The stricture was at the external ring, which I slit up. The hernial sac was tense with fluid, and was accidentally punctured with the knife. A quantity of fluid escaped, and a small piece of omentum (a hernia within a hernia) protruded. This I was unable to reduce permanently, for as fast as I returned it, it protruded again. I found that I could not return the hernia, although the stricture was divided. I therefore brought the edges of the integument together over the sac with a couple of wires, and ordered the whole to be kept covered with ice; he was also to have warm enemata, and a full dose of opium. I hoped that, the stricture being divided, the hernia would return as soon as the congestion should be relieved by the application of ice.

29th August.—I found that he was much better, all the symptoms of strangulation had disappeared. The hernia was still in the scrotum, and the piece of omentum protruding between the lips of the wound. With very little difficulty I returned the hernia, and as it gradually went back, the omentum withdrew itself within the sac, and the whole passed into the cavity of the abdomen.

30th.—Slept well. Bowels have been freely moved. No pain, except about the wound.

There is nothing remarkable in the subsequent history of the case; the wound closed and cicatrized by the 26th of September.

On the 28th September, I operated on the same side for the

radical cure of the hernia that had been strangulated, by introducing a plug, and tying it in the canal with the invaginated integument. Thrusting a curved needle with two silk ligatures through the tissues from the apex of the invagination, I tied them firmly over a piece of wood, and then fixed the plug and invaginated skin firmly in the canal.

The plug was removed on the 2d October, when profuse suppuration had been set up.

On the 6th October, he was making most favourable progress; the invagination remaining firm, and a quantity of exudation infiltrating the canal and adjacent tissues, the hernia not having the least tendency to protrude.

I have not met with many more interesting cases than this. It is a good example of the advantage of not opening the sac, and proves that although a strangulated hernia may be irreducible after the structure is divided, yet that the difficulty may be only of a temporary character, yielding, as in this case, to time and cold judiciously applied. It is the only case that I have met with in which the operation for strangulated hernia has been followed so rapidly by the operation for the radical cure of the hernia itself.

ARTICLE IV.—*On the Use of Bromide of Ammonium in Hooping-Cough.* By R. PEEL RITCHIE, M.D., F.R.C.P.E., Extra Physician to the Royal Edinburgh Hospital for Sick Children, and Physician to the Royal Dispensary.

(Read before the Edinburgh Obstetrical Society.)

IN 1856, Dr B. W. Richardson directed the attention of the profession to the value of iodide of ammonium as a medical agent, and gave the results of his experiments to the Medical Society of London. In his work on the Cause of the Coagulation of the Blood, published in 1858, he gave an account of the action of the remedy after a longer experience. The next preparation of ammonium proposed was the bromide,—the physiological effects of which formed the subject of a communication by Dr G. D. Gibb of the Westminster Hospital, at the Cambridge meeting of the British Association for the Advancement of Science in 1862. At the subsequent meeting, held in 1863 at Newcastle, Dr Gibb presented a further and more extended report on the drug. After alluding to other properties of the bromide of ammonium, in his report to the Association (1862), he states that, "according to the mode of its administration, and the susceptibility of the individual, so did it produce anæsthesia, especially noticeable in the fauces and throat." I may observe that a somewhat similar statement has been made regarding the bromide of potassium. "Even in very small doses it rapidly and completely annihilates the sensibility of the pharynx

and velum palati to such a degree that their parts may be tickled without exciting the least effort at deglutition.”¹ Since Dr Gibb introduced this preparation of ammonium, various practitioners have administered it, and have spoken favourably of it as a remedial agent in pertussis. As I do not think it has as yet been much used in this city, I submit the following observations upon it to the Society.

I commenced to use it in January last, and have since frequently prescribed it. The general result in the cases to which it was given has been relief to the spasmodic cough, and to the characteristic symptom of pertussis—the hoop, but I cannot say that the effect has been uniformly successful.

In prescribing a new remedy it is to be desired that we ascertain in what kind of cases benefit may be expected, and more especially is this desirable when a new agent is suggested for the treatment of such a disease as whooping-cough, for which probably more specifics have been recommended than for any other malady.

Dr Gibb does not allege that it is invariably successful, but that it is exceedingly valuable in many cases. Professor Harley of London University, who has used the remedy extensively, remarks that it “does not appear to act by removing the cough, but simply by preventing the occurrence of its chief and most disagreeable symptom, the hoop.”

The results of my observations of the remedy have not been so favourable as those published by Dr Gibb and Professor Harley. I shall therefore endeavour to indicate shortly what I have observed.

1st, As to the ages of those treated. The youngest was three months, the oldest, four years; the average age, twenty-three and a half months. In my experience the remedy appears to be most successful in children whose age exceeds two years.

2d, As to result. In nearly all the cases there was marked relief to the hoop after a few doses had been given. This was very noticeable in those instances in which the hoop was very frequent; the report given shortly after first administration in several of such cases was that the child was much relieved.

Infants are probably more liable to bronchitic attacks, and in them uncomplicated pertussis is more rarely met with than in older children. For this reason it possibly is that the bromide is less beneficial in those under the age of two years than in those above that age. In three of the cases death occurred—in two from bronchitis, and in the third from congestion of the lungs; but in all of these the hoop had been relieved, especially in the two younger, aged three months and twenty months. In the eldest, aged two and three quarter years, the relief was not quite so apparent.

3d, As to the dose. The quantity I have generally given has been from three to twelve grains a-day, in divided doses, administered every six hours.

¹ M. Huette, Medical Times, 1850, vol. xxi. p. 451.

These quantities are less than those prescribed by Dr Harley, who gives a grain for each year, every eight hours, but this is regulated by the constitution and development of the child. In children of advanced age he gives large doses. In the *Lancet* of January 16, 1864, the particulars of two cases are given, the one a girl aged nine, took twenty-seven grains a-day apparently for a week; the other, a boy aged six, took eighteen grains daily for the same time. In both very speedy relief occurred. In the same journal instances of a child aged three years taking eighteen grains, and of another child aged four, taking twenty-four grains a-day are given.

Dr Gibb gives two or three grains thrice daily to infants, and four, eight, or even ten grains, as frequently to older children.

I have not prescribed a larger dose than twelve grains in the day, but I have given that amount with benefit in cases of the age of four, three, and two and a-half years. Eight grains a-day I have given to children two and three years old. In one instance a child of two years old, by mistake on the part of its mother, was given, without injurious effect, fifteen grains a-day for four days, but this large dose was not attended by a better result than usual. Drs Gibb and Harley prescribe it thrice daily in water. I prefer giving it four times a-day with syrup. If bronchial irritation exists, a mixture of ipecacuanha and squill is required. Dr Gibb is also of this opinion. In complicated cases the administration of an emetic I find to be frequently necessary.

4th, In what cases is it suitable? In the *Lancet* of September 26, 1863, it is stated that Dr Gibb had, in 1862, used the bromide in the treatment of hooping-cough largely, and that twenty-two children were mostly cured by its administration at the West London Hospital. Notes of several additional cases are given, and it is remarked as that physician's opinion, that "like many other remedies it could not be expected to cure the disease invariably," and as a permanent remedy he had more faith in his plan of treatment of dilute nitric acid and the topical application of nitrate of silver to the larynx. It is not stated, however, in what cases he finds the bromide to be most suitable.

In the observations in the same journal upon Dr Harley's cases, it is said, "Dr Gibb discovered in the bromide of ammonium a most valuable pharyngeal and laryngeal anæsthetic, and it is this special character of the remedy which Dr Harley has endeavoured to turn to practical account in the treatment of pertussis." Whilst Dr Harley recognises that the benefit is to the hoop alone, there is no indication as to the cases in which he finds the remedy applicable.

It is left, therefore, for each practitioner to determine for himself in what cases the remedy is suitable. Having used the preparation in upwards of twenty cases, if I may be allowed to express an opinion upon this head, it would be,—that the great efficacy of the

drug is in uncomplicated cases,—that in those complicated with acute bronchitis or pneumonia, the benefit is so trifling that I prefer other methods of treatment,—that in my experience, infants are more liable to such complications than children above the age of two years. To this I consider it to be due, that in the former the benefit from the remedy is less than in the latter—for an acutely congested condition of the air-passages appears to lessen the effect of the bromide as a laryngeal anæsthetic. That the more frequent the paroxysms of hooping, the more marked and rapid is the relief; that greater relief appears to be experienced in those of some continuance than in recent cases; and, lastly, that when chronic bronchitis is present, the bromide should not be given alone, but combined with squill and ipecacuanha mixture, and occasionally with an emetic.

I have not observed that the bromide of ammonium has any tendency to cause nausea, or that it has any effect on the mental powers. In none of the cases in which I prescribed it have convulsions occurred.

ARTICLE V.—*Remarks on the Prevention of Hæmorrhage and After-pains, occasionally following Delivery of the Placenta.* By GEORGE K. H. PATERSON, L.R.C.P.E., and L.R.C.S.E., etc., Balbeggie.

THE subject of hæmorrhage and after-pains occasionally following the completion of labour, will be at all times deeply interesting to those members of the medical profession who practise midwifery; and any feasible suggestion calculated to prevent their occurrence, will, I doubt not, be received with favour.

My chief reason for at present offering the following observations on the prevention of undue hæmorrhage with after-pains, is, that some difference of opinion still exists on this subject in the profession. However, several years ago, when actively engaged in lying-in practice, not a few multiparous women, ere they were delivered of the placenta, told me that as soon as delivered of it, they would have severe after-pains. And it was as true as they said; either sharp or violent uterine pains came speedily on, notwithstanding that the bandage was as usual passed round and well tightened; for this an anodyne was either given at once, or the patients were not interfered with for a day or two, then a purgative was ordered to open the bowels, when the pains either went off or gradually subsided. But, years ago, happening to observe that several of the multiparous women I was called to deliver, had, after the birth of the child and expulsion of the placenta, unusually large or pendulous bellies, with more or less of after-pains, before fastening the bandage, I compressed the abdomen firmly with my open hands—one on each side of the linea alba—several times up and down and laterally, expelling at the same time a good deal

of fluid blood and coagula, with decided relief of the pains, diminution of the size of the abdomen, and speedy contraction of the uterus; and a bandage being applied immediately afterwards, little farther attendance was required on my part, as the treatment seemed to hasten recovery considerably.

In the lingering labours, too, of multiparous delicate women, and especially when there is found a flaccid state of the uterus, with more or less of hæmorrhage and after-pains succeeding expulsion of the placenta, bi-manual compression has a striking and speedy effect, *first*, in expelling coagula; *second*, in constringing the veins of the uterus; and, *third*, in inducing proper contraction of it.

This practice, from its good effects, I have for years past continued; and, but for it, I have not the slightest doubt whatever that hæmorrhage and after-pains, or hour-glass contraction, attended by great exhaustion, if not loss of life, would have often occurred in the cases under my care ere other means had time to take effect. Indeed, now, in all my cases of labour, after complete delivery, I immediately compress the abdomen more or less as a reliable preventive of uterine irregularity, flooding and pain, previous to tightening the bandage, and have never to my recollection since I practised this method been called back on account of post-partum hæmorrhage and violent pains, or hour-glass contraction.

The readiness and freedom with which this preventive method of compressing the uterus through the parietes of the abdomen, when it is tumid or flaccid or torpid after labour, and its success in emptying the organ of irritating coagula and allaying agonizing pains, or in subduing these if present some time afterwards, as well as in checking hæmorrhage, must commend the more general practice of it in preference to trusting chiefly to manipulation of the internal uterine surface; while no one can forget to take into account the greater risk by the latter method of increasing the hæmorrhage, before it can be satisfactorily carried out, or other remedial means can be put in operation to cause the uterus to contract sufficiently. And in this readiness of application lies the true value of external compression when early made, as a preventive and effective power in post-partum hæmorrhage, and of irregular contraction of the uterus after placental delivery in multiparous women.

ARTICLE VI.—*Analysis of the Evidence on which John Riley was Convicted, at the Glasgow Spring Circuit, of the Murder of Anne Laffy.* By WM. SELLER, M.D.; F.R.S.E.; F.R.C.P.E.

THE value of circumstantial evidence in the administration of justice, even when such evidence rests on a sufficiently ample basis, is very apt to be overlooked by the public. There is, indeed, an unfounded prejudice against evidence of that kind, arising chiefly

from the influence of traditionary tales of the innocent having been convicted and punished merely because appearances were against them. Nothing could warrant a course likely to be attended by such a result. But circumstantial evidence, rightly followed out, is susceptible of the utmost certainty. If circumstantial evidence be rejected in an advancing state of society, many crimes must pass unpunished. The efficacy of punishment is dependent on its certainty. To repress crime effectually there must be next to an invariable detection of the offender, and next to an invariable infliction of punishment. Such an effect can never be attained so long as circumstantial evidence retains its unpopularity. Hardly any cost, therefore, can be too great for the detection of crimes; while there should be as little interference as possible with the subsequent course of justice.

The case about to be commented on shows how much certainty belongs to evidence solely of a circumstantial character.

Early in the morning of Tuesday, December 8, 1863, the body of Nancy Laffy, a large and strongly-made married woman, was found quite dead in a slight hollow at the foot of the hedge on the road to Biggar, within the parish of Bothwell, in the county of Lanark. The injuries on her person were of such a kind as to make it certain that she had died either by the immediate effects of the violence done to her, or that, being rendered insensible, she had met her death for want of aid under exposure to a tempestuous night. In either case, an undoubted murder of a savage character had been committed. The medical report, which is very creditable to Dr Naismith of Hamilton and Dr Barrie of Motherwell, the gentlemen by whom it was drawn up, exhibits an appalling amount of injury, some part of which was doubtless owing to the vigorous resistance made by the woman to her assailant.

The lower half of the left ear was torn from the head, so as to hang by a shred; there was an extravasation of blood beneath the skin in the left temple, and in the substance of the temporal muscle; there were several lacerations in the left eyebrow, one penetrating to the periosteum; there was a wound in the left cheek, accompanied with fracture of the malar bone and displacement of the orbital portion of that bone and of a part of the upper jaw-bone; several teeth of the same jaw were broken, the fragments sticking in the gum; there was a deep and severe wound running along the left side of the lower jaw; there were abrasions and dark patches in the front and on the sides of the neck, beneath one of which a considerable effusion of coagulated blood was found. The second rib was dislocated from its cartilage, with effusion of blood, to some extent, in the adjacent parts. On the arms and hands, and also on the lower extremities, there were numerous discolorations, abrasions, and lacerations. Within the vagina were two wounds, the one near the orifice, the other near the os uteri, the latter penetrating almost into the peritoneal cavity. The margin of the anus was

destroyed, and at its posterior part there was a deep chasm, sufficient to admit the tips of four fingers. The internal organs, with the exception of an adhesion between the opposite surfaces of the left pleura of old standing, were in a very healthy state.

There were marks of a struggle and much blood upon the road about 100 yards distant from the hollow where the body was found, and the grass was flattened between the two places, as if the deceased had been dragged along the intervening space.

Thus there is no possible doubt that the woman died by the violence done to her. It appears also that she had been robbed, since the money she was seen to have the night before in a little bag round her neck, to the extent of several half-crowns and some smaller silver, was gone when the body was discovered.

The chief circumstances which connect John Riley with the murder are, *1st*, That he was left by a witness, Hannah Ewart, walking towards the place where the body was found, a short time after eleven o'clock on Monday night, that place being no more than about a quarter of a mile distant; *2d*, That there is no reasonable doubt that Riley was the person seen by another witness, Russell, about half-past eleven o'clock, standing beside a woman lying on her back at the place where the marks of a struggle were observed next day, while he, when he saw Russell, called out that some one had robbed this woman; *3d*, That Riley had no money when he left his lodgings on Monday, and none, or next to none, when he left Holytown, near eleven o'clock the same evening, but that when he reached home after midnight, he was seen to take money from his pocket and count it quickly, and then put it back to his pocket; *4th*, That there was blood on his person and on his clothes, that his slop was much torn, and there was a scratch on his face from the eye to the mouth, which was not there late on Monday evening; *5th*, That he got water to wash; while water next morning in the dark seemed to the landlady like soup, and as if the men had blown their noses in it, but had no bad smell; *6th*, That he slept that night in his shirt, which his landlady had never known him do before, while she observed, when he put on his trousers next morning, that his drawers were in the inside of the trousers; *7th*, That, when he went out on Tuesday, he concealed his drawers in a ditch, where, two months after, they were found torn to pieces and much stained, though no attempt was made to prove that the stains were from blood; *8th*, That he said to his landlady on Tuesday, and to a fellow-workman on Wednesday, that he had sold his drawers; *9th*, That when the murder was spoken of in his presence on Tuesday he stopped the remark by saying he would rather the speaker would give him a glass of whisky; *10th*, That though he had arranged his living for the beginning of the week, he went off on Wednesday, the second day after the murder, notwithstanding that there was plenty of work, while he was found two months after near Carlisle, where he called himself O'Brien.

The evidence given on the trial is complete as to all the points above detailed; nevertheless some observations are necessary with respect to the counter-statements made by Riley in his declarations. As many of the statements made in the declarations are proved beyond doubt to be false, so the less credit is due to those which have been but imperfectly refuted.

Riley had lost his cap on Monday, and between ten and eleven that evening he got from Mrs Johnston, the keeper of a public-house in Holytown, a piece of black cotton cloth, the old lining of a gown, which he wrapped round his head, and continued to wear throughout the night till he was seen so attired by his landlady when he returned to his lodgings some time after midnight. By this singular head-dress he is made subject of remark by several of the witnesses. Mrs Reid, the keeper of another public-house, where he got his pipe lighted, describes him as having a black cloth on his head; Hannah Ewart, the girl beside whom he walked part of the way towards the place where the murder was committed, saw him come out of Mrs Reid's public-house with a kind of dark cloth tied about his head; Russell, who saw a person standing beside a woman lying on the ground, of the same height as Riley, dressed like Riley, and in no respect different from him in figure, and having an Irish accent, said that that person had no hat, but something on his head he could not tell what. Lastly, his landlady in her evidence said she noticed that Riley, when he came home, had a cloth on his head.

This piece of black cloth on Riley's head is an important element in the evidence. Hannah Ewart did indeed swear positively to the identity of the prisoner in the trial; but she admitted that it was not till she had seen Riley a second time in prison that she began to feel sure he was the person who had walked beside her on the road in the evening of the first Monday of December. To those who heard her give her evidence, this hesitation at first on her part, it appears, was the reverse of a flaw in her testimony, particularly as the constable who brought him from England testified to the great change on his ordinary appearance at that time; but the black cloth is a complete supplement, for Mrs Reid swears that Riley came into her house for a moment to light his pipe, near eleven o'clock on Monday night, with a black cloth on his head, and Hannah Ewart saw the man who walked beside her come out of Mrs Reid's public-house with a dark cloth on his head.

The black cloth also supplements Russell's testimony,—the person Russell saw might have been another Irishman of the same height and figure as Riley, dressed exactly like him, with a sloop hanging over his haunches; but it is inconceivable that there should have been within the space of one or two hundred yards on that road at the same point of time another such Irishman with something indescribable on his head like that worn by Riley.

Riley's statements in his declarations were conceived with some

ingenuity; but, being refuted on the trial, recoil on him with irresistible force. There are two declarations,—in the first he says nothing of turning back after he had got some way on the road to Legbrannock, where he lodged; in his second he says he turned back, and then got the black cloth for his head from a woman where he applied for lodgings, and that after this he was assaulted and injured by three men, and that then he took the road to Legbrannock by a coal road, and that he saw neither man, woman, nor child by the way. It was proved on the trial that he got the black cloth for his head before eleven o'clock, just as he set out for Legbrannock, then walking beside the witness Hannah Ewart, whom, by his appearance and manner, he so frightened as to induce her to take shelter in a house by the way, where she remained for an hour, till a young man undertook to see her to her father's house. There is not the slightest confirmation of his having been attacked by three men, either before or after he began to wear the black cloth on his head, or of his having inquired for lodgings, or of his having gone back to Holytown after parting with Hannah Ewart. There was a slight disturbance in Holytown that night, but the police constable swore that Riley was not there, and that he must have seen him if he had been there; and Hannah Ewart swore that the noise of a disturbance arose when she and Riley were already on the road. Riley expected to account for the scratch on his face and the blood on his clothes by the struggle he alleged he had had. He said that his nose was made to bleed, and that he eased himself in his drawers at the time of this assault. He said that he washed his drawers and the tail of his shirt after he got home, and that he put his drawers afterwards into a ditch, on account of their bad smell. His landlady discovered no bad smell next morning in the water he had to wash with. The watchman on the Legbrannock railway, the only coal road by which he could have gone home, swore that nobody passed that way between six o'clock in the evening and two o'clock the next morning. He said he left Legbrannock because the work was finished: the overseer swore to the contrary, and that he would have been continued in employment if he had desired. The drawers he put away were new. He declared further that he had no money when he went away from Legbrannock but a penny and one farthing. His landlady, who was as friendly to him as possible, swore that she saw him, on the night of the murder, after he came home, count eight or ten pieces of money in his hand, but she would not say whether they were silver or copper. As to seeking lodgings that night, he had no money, and Holytown is but a short walk from Legbrannock.

The most improbable suppositions will not suffice to exculpate Riley. For example, if it be assumed that Riley went on after leaving the witness Ewart, and found the deceased sleeping on the road just at the time when the witness Russell came up, and that he then went back to Holytown and was assaulted, as he affirms, and

got some pieces of money from some friend, and that some one else subsequently robbed and murdered Mrs Laffy, how are the discrepancies between his statement and the facts established on the trial to be accounted for? Are proved falsehoods in the case of an accusation to form no element in the conviction? Or is it argued that it is injustice to ask a declaration from an accused person, and that it is unknown in the law of England? Be it so. Had Riley in this case made no declaration, the facts established against him would have more than sufficed for his conviction. It would have been proved that he had no money before the murder, and that he had money after; and there would have been no greater opportunity of proving the pretended assault on him without a declaration than there was with his actual declarations.

Part Second.

REVIEWS.

A System of Surgery. By JAMES MILLER, F.R.S.E., F.R.C.S.E., Surgeon in Ordinary to the Queen for Scotland; Professor of Surgery in the University of Edinburgh, etc., etc. Edinburgh: Adam and Charles Black: 1864.

PROFESSOR MILLER is ever welcome as a contributor to the literature of the profession, but is especially so in this his last work, which we think he is mistaken in describing in the preface as a new edition. We certainly recognised in it the easy, fluent style which characterized the former volumes, and we met with many familiar artistic illustrations; but as we looked over it, it became apparent that the new edition was almost a new book, and that it had, in the act of revision, undergone such important changes as to entitle it to rank as another work altogether from the fourth edition of the "Principles and Practice of Surgery." The title of the work, "A System of Surgery," is, we think, well chosen; it is a return to the time-honoured usage of the days of Benjamin Bell, Latta, Allan, and others of the Edinburgh School; and it more characteristically describes the methodical arrangement of the subject as treated by our author, than could have been done by any other term which occurs to us.

The first change which strikes the reader is the consistent and careful use of terms in describing the inflammatory process and its results,—language which will either suit the exudation theory of the

Vienna school, or the textural theory of Goodsir, Virchow, and their followers. At the same time, it is manifest that Mr Miller espouses the doctrines of the cellular pathologists, of which the following extract from his chapter upon Malignant Tumours is sufficient evidence:—

“Microscopically, scirrhus shows a distinct basis of fibrous tissue; between the meshes are contained multitudes of cells of the kind already described. When the development of these cells can be observed, as, for example, in the connective-tissue of muscular sheaths, or even in muscle itself, the nuclei of the connective-tissue corpuscles in the one instance, and the sarcoous substance in the other, are found to become multiplied. This multiplication continues till all trace of the connective-tissue corpuscle or sarcolemma is destroyed, and then a mass of cancer-cells remains enclosed among the surrounding tissues, which in turn become implicated in the disease. And thus by the coalescence, partial or complete, of groups of cells originally found separately within normal elementary structures, the diseased mass is formed, presenting varieties of combination of original tissues with fibrous textures and cancer-cells, mingled in the apparently inextricable confusion which is to be seen in any fully-developed cancerous growth. ‘What is called a tumour constitutes,’ therefore, ‘a conglomerate mass, often extraordinarily large, made up of a number of little miliary foci (lobules) of which every single one must be referred to a single or a few parent elements.’—(Virchow.)”

The chapter upon Tumours is peculiarly clear and practical, while at the same time the researches of modern pathology regarding the precise character and mode of origin of morbid growths have been carefully brought together. The basis of the classification is the old one of Abernethy, admirably suited for the purposes of diagnosis, prognosis, and treatment; but this outline has been filled in by grouping under the old heads those new forms of tumour with which modern science has made us acquainted.

The chapter upon Scrofula and Tubercular Affections is characterized by the same clear references to structural change as the starting-point of diseased action, and contains a very complete *resumé* of the present state of knowledge of the subject.

Mr Miller is singularly free from prejudice; he speaks favourably of acupressure, and describes its employment in the arrest of hæmorrhage. In using it he says—

“The needle is either inserted into the textures from the cutaneous surface inward, till its point comes out upon the surface of the wound, close by the bleeding vessel, when the point is carried over the arterial tube, and then pushed onwards among the tissues, whose elasticity compresses the needle against the artery. Or a common sewing needle (No. 6), with wire threaded through the eye, is passed into the textures, upon the surface of the wound, in like manner effecting the compression.”

But progress does not tarry; the ingenuity of Professor Simpson has devised a farther plan, suited to a most difficult site, for the arrest of bleeding, viz., the pedicle of an ovarian cyst. The needle, threaded with twisted wire, is passed beneath the artery to be secured, a loop of wire is then passed over the point, and the double wire carried round the eye end of the needle is given a single firm twist, so as to secure the vessel by firm embrace

between the needle and the wire; while a small metal cap, attached to a wire, slips over the needle point, so as to guard the surrounding parts. An Aberdeen house surgeon has simplified the process still farther. He transfixes the open mouth of the bleeding vessel by a needle threaded with wire, then turning the needle upon itself, so that its eye describes half the circumference of a circle, of which the artery is the centre, he pushes its point among the tissues. Thus the vessel is closed by a modification of torsion, and its orifice secured more satisfactorily and simply than by any of the other previous measures for effecting acupressure.

On the much-vexed question of caries of bone, we find Professor Miller particularly perspicuous and intelligible:—

“As already stated, the diseased portion may be conveniently considered as consisting—usually, though not invariably—of three parts. Suppose a cancellated bone, such as the os calcis or astragalus, affected, the ulcerous surface is usually central, and with it the sinus, opening upon the surface, communicates through an aperture in the thin laminated crust of the bone. If a section of the bone is made so as to expose the affected part, the section displays in the centre a soft, spongy substance, of a dark purple, maroon, or rosy tint. This resembles granulations in structure, and is copiously supplied with blood-vessels. On washing with water, and carefully picking out the soft granulation tissue with forceps, a delicate framework of fine, needle-like, osseous spicula, of a translucent or opaline colour, becomes apparent. To it the granulations are not adherent. It has no membranous endosteal expansion covering it, and no bloodvessels entering it. A portion examined by the microscope contains no vessels, and no corpuscles in the lacunæ. This spicular network is, in fact, the calcareous remains of the walls of the cancelli, but no longer a vital structure capable of reparation, but a dead skeleton or framework which supports the vascular medullary tissue,—a dead texture, which acts as a foreign body, keeping up irritation and suppuration, and determining the suppurative of that medullary tissue by which it is enveloped. Beyond this, but continuous with it by a gradual transformation, we find the cancelli enlarged, and occupied by a very vascular medullary substance, adherent to their osseous walls. A portion of this bone, examined microscopically under favourable circumstances, will show the lacunæ enlarged, and crowded with corpuscles, fusing together, and thus opening up the texture of the walls of the cancelli, piercing them through, and leaving in their place the product of corpuscular reproduction, in the form of a vascular medullary or granulation tissue, continuous with, and structurally identical with, the medullary tissue occupying the normal cancelli of a spongy bone. Beyond this area, the irritation produced modifies the nutritive process in such a manner that the walls of the cancelli become thickened at the expense of the medullary substance, which is diminished by the transformation of its connective-tissue into bone. This part of the bone in section is tough, dense, and almost ivory-like; and when this outer area affects the subperiosteal surface of the bone, it becomes developed into osseous spicula, ridges, and stalactitic projections. The two interior portions are incapable of efficient restoration and repair; the external is busy, as it were, atoning for their deficiency, by throwing out new osseous matter, sometimes in great abundance. Thus the carious spicular cavity, filled with the softened results of the retrograde transformation of fully-developed bony tissue, is surrounded first by spongy bone, and more exteriorly by osseous product, forming a hard, irregular ridge, sometimes but slight, at other times extensive. It is not meant that such an arrangement is perfect in all cases, but only that it obtains to a greater or less degree. Sometimes continuous necrosis is engrafted on the ulcerative process; and in the cavity may be found dead portions, either of cancellated or laminated texture, partially adherent, or altogether loose, as sequestra.”—Pp. 290 and 291.

This is one of the clearest and most intelligible descriptions with which we are acquainted of what is generally considered a somewhat obscure subject.

The chapters on Wounds are rich in theoretical and practical matter; the subjects of hydrophobia, tetanus, and gunshot wounds especially deserve attention. We observe that Mr Miller recommends from theoretical considerations the tincture of the Calabar bean in the treatment of both hydrophobia and tetanus, as being calculated to obtain "the same depressing influence upon the special ganglionic centres as has been attempted to be effected by the wourali, or as follows the use of conium, when given in almost poisonous doses."

In Mr Miller's "Principles and Practice of Surgery," the Principles constituted the larger portion of the work; in this new "System of Surgery," the chief additions have been made to the practical portion. The increase is chiefly due to the space devoted to operative procedures. The chapters upon the ligature of arteries, amputation, lithotomy, lithotripsy, diseases of the larynx and of the urinary organs, on fractures and dislocations, are completely remodelled and greatly improved. Those upon the eye, ear, and syphilis, are obviously rewritten, and contain a large amount of scientific and practical information.

In reference to the article on syphilis, we must observe that, in our opinion, too much favour is shown to the treatment of syphilis by syphilization. The Norwegian physician, who may be said to have made that subject particularly his own, fails most completely in substantiating any one thing in its favour except that under its prolonged employment the syphilitic symptoms usually disappear in the course of months, and do not, except in a few cases, relapse. But it would be well to bear in mind, and Mr Miller admits it, that many judicious practitioners in our own country have for many years given up treating syphilis altogether, regarding it as a most trivial and evanescent affection, except when aggravated by mercurial treatment.

The remarks on tracheotomy in croup are so well couched that we are sure they will meet with general assent:—

"The question arises, Shall we perform, or shall we not resort to tracheotomy? This question has been differently answered by the experience of different surgeons. By some, it is considered as a desperate attempt to save life, and therefore not justifiably undertaken so long as medical treatment holds out a shadow of hope of checking disease. By others, a great success in the employment of tracheotomy, in cases of supposed croup, has led them to resort to its performance in every case, whenever the respiration becomes seriously interfered with, whatever the stage of the disease,—so long, in fact, as the little patient is struggling ineffectually for breath, and not actually moribund. To the latter class of practitioners we incline to belong, and hold that the surgeon should unhesitatingly undertake the operation whenever the dyspnoea is urgent, sustained, and accompanied by drawing of the lower part of the chest in inspiration, with recurring paroxysmal attacks; a rapid pulse, becoming feeble; a congested or a pallid and leaden aspect, with tinged veins

and copious perspiration. If the operation is not performed under such circumstances, death may ensue during the next paroxysm; or if it be delayed longer, the delay is more to induce œdema of the lungs, to increase the likelihood therefore of congestion or actual stasis of the pulmonary circulation, to exhaust the heart by its inability to force onwards the blood accumulating on the right side, and, lastly, still farther to diminish the powers of life by the persisting dyspnoea, and the continuance of depressing treatment, so that the little chance becomes no chance at all when tracheotomy is performed at a later period. No doubt the tube and wound in the trachea may be causes of bronchitis, but certainly impending asphyxia, œdema of the lung, and its consequences, and exhaustion of the patient, are far more likely to act injuriously in determining not only bronchitis, but also collapse of the lung, if permitted to continue till a fatal issue is obviously threatened. No doubt, also, the false membrane may extend beyond the tracheal opening; that, however, does not preclude its exputation after tracheotomy, any more than before; nay, it saves the patient from the risks of the shreds or casts becoming imparted in the glottis, and thus inducing instantaneous death. But experience proves furthermore, that where it does not save the little patient from death, it alleviates his sufferings, affording him respite from struggling efforts, at a small expense of temporary additional pain, while it stills the hoarse cry and the barking cough which have, during the weary watch, been so sore a trial to his anxious friends. In undertaking the operation, the surgeon should satisfy himself as to the condition of the chest, seeing that the want of expansion acts equally on both sides, that the respiratory murmur—not the hoarse and shrill rhonchus communicated from the larynx, and consonating through the bronchi of the lung, but of the air entering both lungs—can be heard, and that there is no dulness on percussion at either base. His duty, then, is plain. He should perform tracheotomy as speedily as possible. The operation may not save his patient, or the case may not be one of true croup, but certainly nothing else will help the sufferer whether the case be croup or not.”—Pp. 873, 874.

It is a pity that in the getting up of this book some means had not been devised for making it somewhat less unwieldy in point of size; the type might have been smaller, or the pages somewhat larger. In another edition, the Professor might also perhaps, advantageously, limit the space occupied by some of the subjects. The chapter on venereal disease, for example, which for mere practical purposes he has treated at too great length, might be cut down. The enumeration of the different generic types of cutaneous eruption, and a general indication of the rules of treatment, instead of the elaborate description of each special form, would probably have served a student's purpose better, while it certainly would have saved him in some degree from the fear which a large book is sure to inspire. In these respects, however, it becomes all the more valuable and full as a work of reference for the practitioner.

In concluding this somewhat discursive notice, we must not only congratulate Mr Miller upon the success he has achieved in the production of this work, but also the student and practitioner upon the satisfactory nature of its contents, which are so well suited to fulfil the double purpose of instructing the beginner, and advising the surgeon occupied in the active practice of his profession.

The Science and Practice of Medicine. By WILLIAM AITKEN, M.D.,
Professor of Pathology in the Army Medical School, etc., etc.
In two Vols. Second Edition, revised and re-written. London:
Griffin & Co. : 1863.

To write a good work on the Practice of Medicine is an undertaking of no ordinary difficulty. The collateral sciences have made great progress of late years, and Practice of Medicine has fully shared in their advancement. Pathology has become a more definite science; Symptomatology has attained to a considerable degree of precision; and though Therapeutics are still in a somewhat transition state, our eyes have at least been opened to many of the errors of our predecessors, and we may hope that we are at length started upon the right road. These very advances of Medicine are the sources of difficulty in detailing its progress. No one in the present day can be equally familiar with all the departments of Medicine, even if taken in its limited sense as excluding Surgery and Obstetrics. Original workers necessarily confine themselves to certain departments; and we can only expect a complete work from men who are not so occupied by original researches as to be confined within a limited circle, and who have the time and the inclination to avail themselves largely of the labours of others. In other words, it is only to compilers that we can look for complete treatises. Nor should any discredit be attached to the term compilation, if the work be properly executed. It is not enough to consult a great many books in the various departments of medicine, and to bring together in a single treatise the statements of those who are considered the most trustworthy authorities on the different subjects; the author must, in the first place, make thoroughly his own the information he has derived from a variety of sources, and he should not communicate it to others until he has himself carefully digested it. He must not merely furnish extracts, more or less plausibly disguised, from the works of others; he must build up a complete whole, in which the principles at first laid down are carried out into details, and in which the reader is not confused by the occurrence of contradictory statements.

The want of a good text-book on the Practice of Medicine has been for some time felt both by students and teachers. The most valuable systematic treatises which have appeared within the last thirty years are the works of Dr Craigie and Dr Watson. Dr Craigie's book, though written nearly thirty years ago, is still a work of great value. It embodies the results of great learning and immense research; while the personal experience of the author is everywhere apparent, and makes the book valuable in a practical as well as a literary point of view. Indeed, it is remarkable how completely Dr Craigie had caught up not only the spirit but the details of discoveries which were still in progress at the time at

which he wrote. Still, thirty years are a long time in the history of science, particularly of such a science as medicine; and Dr Craigie's book has on various points been left behind. It is a work which all would do well to refer to, though it cannot now be recommended as the sole textbook for a student. Dr Watson's Lectures have been widely and deservedly appreciated. The value of the matter, the charm of the style, and the high professional tone which pervades them, have contributed to establish a popularity which is manifested by the repeated editions they have gone through. But even Dr Watson's Lectures are insufficient for the wants of the student and practitioner. The cares of an extensive metropolitan practice have prevented the author from keeping quite abreast in his writings with the pathology of the present day. No doubt, valuable additions and improvements have been made in successive editions, but these have not been sufficient; the work would require to be to a considerable extent remodelled, in order to bring it up to the present state of science; and such an undertaking we have no right to expect from the distinguished President of the College of Physicians. There is, therefore, undoubtedly room for a new textbook on the Practice of Medicine, and this want it has been Dr Aitken's endeavour to supply.

The work now before us, though called a second edition, may be considered as substantially a new one. The first edition was published in 1857, and consisted of a single crown octavo volume; the present has been to a great extent re-written, and has expanded into two volumes demy octavo, comprising between them eighteen hundred pages.

We may at once state that we consider Dr Aitken's work an important contribution to medical literature, particularly as bringing before the profession in a readily accessible shape a large amount of valuable matter, not previously existing in a collected form, but scattered through periodicals and original memoirs. Dr Aitken has spared no pains in the collection of his materials; and has shown himself scrupulously careful in assigning to the various writers whose observations he quotes the credit which belongs to them. At the same time we are bound to say that the work is of unequal merit; while the portion which treats of the "Science of Medicine" is in general complete and satisfactory, that which is devoted to the "Practice" is of much less value. This, we believe, to depend upon the nature of the pursuits to which Dr Aitken has devoted himself, and to be due to causes to a great degree beyond his own control. In the Royal Infirmary of Glasgow, in the British Hospitals at Scutari, in the Army Medical School, he has enjoyed ample opportunities of studying pathology; but this very devotion to science has prevented him from obtaining the experience of the practical physician. Consequently, while in matters connected with pathology Dr Aitken generally speaks with authority and decision, in the departments of symptomatology and treatment,

there is too often a degree of indecision which does not indicate much practical familiarity with his subject. It was undoubtedly a bold undertaking in Dr Aitken to set about the preparation of such a work as that now before us, and to have even partially succeeded entitles him to a high degree of praise. But while we entertain a sincere respect for Dr Aitken's labours, it is our duty to point out where, in our opinion, the work falls short of what a textbook ought to be.

In the first place, we do not approve of the classification of diseases adopted by Dr Aitken; it is the nosological arrangement devised by Dr William Farr, the nomenclature of which has been pretty generally adopted for statistical purposes. According to it diseases are arranged under five classes: ZYMOTIC, comprehending the Miasmatic, Enthetic, Dietic, and Parasitic; CONSTITUTIONAL, embracing the Diathetic and the Tubercular; LOCAL, such as Brain Diseases, Heart Diseases, and so on; DEVELOPMENTAL, including the diseases of children, women, and old people, and the Atrophic; finally, LESIONS FROM VIOLENCE TENDING TO SUDDEN DEATH. Without expressing an opinion as to how far this system is adapted for the purposes for which it was originally intended,¹ we do not consider it well adapted for the purposes of a textbook. It is, we believe, better for the student to begin with a more artificial arrangement; it is not until he has attained to a certain acquaintance with the nature and phenomena of disease that he is prepared to profit from a nosological arrangement which classifies diseases according to their natural affinities. Dr Aitken himself does not consider the system perfect, but his objections, we must confess, are of a totally different nature from our own. Thus, he says, "Diseases, also, are undoubtedly grouped together in it which have no natural alliance." He instances Diabetes, which Dr Farr classifies under affections of the kidney; but which he removes to the Diathetic order of Constitutional diseases. It is very true that "*Diabetes* is not necessarily a disease of the kidney;" but we do not see that very much is gained by removing to a somewhat vague group, including Rheumatism, Gout, Anæmia, Beriberi, Cancer, and others, a malady which, in its most prominent symptoms at least, is closely connected with the urinary organs. In fact, if this natural grouping together of diseases were to be logically carried out, far greater changes would require to be made. Cirrhosis of the liver, for instance, we regard as quite as much a constitutional affection as chronic Bright's disease; but while the former is placed by Dr Aitken among local hepatic diseases, the latter is classed among the constitutional affections. One great objection to the classification is, that it separates diseases which practically are nearly allied. We cannot approve of an arrangement which entirely dissevers chronic from acute Bright's disease, which places Asthma

¹ See a paper by Dr Stark, bringing forward objections to this nosology, in this Journal for June 1860.

among the Diathetic diseases, and which removes Croup from the Diseases of the Respiratory Organs, to be grouped with Influenza, Cholera, and Diarrhœa, among the Mucous Fevers.

Closely connected with the Classification is the Definition of Diseases. Diseases may be defined in two ways: either according to their essential nature, or according to their characteristic symptoms. Of these methods, the former is undoubtedly the more satisfactory; but pathology is not yet sufficiently advanced to enable us to define all diseases, not even the majority, in this way. The second is, in some cases, satisfactory enough; but, in general, symptoms are not pathognomonic, and many diseases are so closely allied that a concise *definition* is insufficient to distinguish them, and recourse must be had to a *description* which involves many details. On the whole, unless where a brief pathological definition can be given, we think it better in a textbook to give up altogether the attempt to define diseases. Dr Aitken thinks otherwise; and each disease is preceded by a formal definition. But we have a right to object that his definitions are not framed according to any fixed principle. Some are pathological; some are symptomatological; while some are a combination of the two. Thus, pericarditis is simply defined as "an inflammation of the fibro-serous membrane containing the heart, and investing it on its external aspect." Phthisis is "the deposition of tubercular matter in the lungs, associated with the constitutional phenomena of tuberculosis." Pleurisy expands into the following: "Inflammation of the serous membrane that lines the cavity and covers the viscera of the thorax. It is characterized at its outset by a febrile chill, followed by an acute sharp pain in some part of the chest frequently called 'a stitch in the side,' as it is usually confined to one spot about the lateral regions of the thorax. The acts of respiration are performed rapidly, and are not completed. A dry short cough supervenes, and the pulse is hard and quick. The natural serous secretion of the pleural sac is arrested in the first instance, but soon becomes increased in quantity, and of an inflammatory type, the exudation tending to assume the *corpuscular* character. The effusion more or less rapidly increases, and may ultimately assume a sero-purulent character; and the parietes of the corresponding side of the chest may dilate accordingly."—Finally, the definition of Sun-stroke is too long for quotation, extending to more than a page, and being in fact a not very condensed description of the condition in question.

It is, however, in the departments of Symptomatology and Treatment that Dr Aitken is least successful. In writing a systematic work, a certain degree of dogmatism is not only allowable but necessary. What the student wants is not an account of the opinions of others, but a clear statement of the author's views, which he can accept as a guide for himself. Dr Aitken's account of the symptoms of disease is too often not the expression of his

own experience or opinions, but an acknowledged abstract of the views of others. No doubt, Dr Aitken has accumulated his facts most conscientiously, and has generally referred to the best authorities; but it is very unsatisfactory to find frequently, not merely in regard to the less common diseases, but to those of everyday occurrence, such statements as the following:—"The essential characters of these murmurs are condensed as follows from," etc.—"From this excellent work the following remarks have been mainly compiled."—"A resumé of which is here given from the admirable treatise of," etc. Of course, every systematic writer must refer to the labours of others; but in regard to ordinary diseases, much of the symptomatology is to be looked upon as common property; and the result of an author's giving an abstract of the views of others, instead of making statements on his own authority, is to cause the reader to lose sight of the individuality of the writer.

In not a few diseases the account of the symptoms is indistinct or incomplete; in some it is even erroneous. We select one or two examples from the chapter on Diseases of the Chest. The following is all that is said regarding the physical signs in the first stage of pneumonia:—

"The physical symptoms of pneumonia vary in proportion to the intensity of the inflammation, and the consequences it produces. Diffuse inflammation is determined by a sound termed 'crepitant.' This sound evidently takes place in the pulmonary tissue, and has been variously compared to the crackling of salt thrown upon the fire, or to air blown into a dried bladder, or to the crepitation of the hair when passed between the fingers near the ear. The cause of this sound is variously interpreted, some pathologists attributing it to the dryness which accompanies the early state of inflammation, while others attribute it to bubbles of air breaking in a fluid of greater density than water, and contained in the air vesicles of the inflamed part.

"If the pneumonia assumes the character of serous inflammation, a loud mucous rattle is heard, which resembles a loud roaring, rather than crepitation. It is supposed to be caused by bubbles of air breaking through a mass of slightly viscid fluid. This phenomenon is one of the most remarkable connected with disease of the lung. In both the preceding forms of inflammation the chest on percussion returns a clear sound from the lung where the air is still penetrating. If a dull sound is returned, it is on account of the fluid in pleurisy, or collapse of the lung in bronchitis."—Vol. II. p. 828.

In the first of these paragraphs the account of crepitation is unsatisfactory; its characters are not duly insisted upon, and the student would probably be led by it to believe that crepitation took the place of vesicular breathing throughout the whole of the respiratory act. The second paragraph we scarcely understand; we presume that the word "serous" in the first line, applied to inflammation, is a misprint for mucous; if it be so, the sound described merely indicates that the signs of pneumonia are concealed by those of bronchitis, and it cannot therefore be looked upon as characteristic of pneumonia.

In the account of pleurisy the following passage occurs:—

"In pleuritis, auscultation and percussion are equally valuable in determining the amount of effusion, and sometimes the nature of the effusion. If serum or

pus be effused to the amount of a pint, for instance, the lung is displaced to that extent; and consequently the lower portion of the chest, when struck, returns a dull sound, which extends as high as the level of the fluid. If we now auscultate the patient, the respiration is also lost below the level of the fluid. Besides these results, the voice gives very striking indications of the lung becoming so far condensed from the pressure of the fluids; for we very constantly have *bronchophony*, and occasionally *ægophony*.

"When the effusion is so considerable as to form empyema, and the cavity of the chest is only partly filled, we sometimes have the metallic sound."—Vol. II. p. 795.

The second paragraph is certainly calculated to mislead, more especially after the statement in the first, that by means of auscultation and percussion we can sometimes determine the nature of the effused fluid. The student would doubtless conclude that "the metallic sound" (on percussion, we presume) was characteristic of empyema; whereas we never have metallic resonance unless there is air in the pleura, or unless we are percussing over a large empty pulmonary cavity.

We were surprised to read the following statement with regard to bronchitis:—"The danger of this disease is denoted by the quantity of fluid effused, and by the gravity of the sound. The sharp chirping note is less to be feared than the graver and deeper notes." It is quite true that the danger of bronchitis depends very much upon the amount of effusion, but it is not the case that it is proportional to the gravity of the sound. On the contrary, grave, sonorous notes originate in the large tubes, chirping or whistling in the smaller; and the danger in bronchitis increases in proportion as the finer bronchi become involved.

The account of the physical signs of phthisis is exceedingly imperfect; all that is said regarding this subject, one of the most important with which the student has to do, is comprised in the following extract:—

"PHYSICAL SYMPTOMS.—If the chest of a patient labouring under cough and other symptoms of incipient phthisis be carefully examined, we may at first observe nothing remarkable, except, as a general rule, that its transverse diameters are small. If the disease be further advanced, we find the patient emaciated, together with a singular immobility or incapacity of dilatation of that portion of the chest immediately below the clavicle, so that he breathes chiefly by his shoulders and diaphragm, and is unable to 'fill his chest.' In the latter stages of the disease the whole of the affected side, viewed anteriorly, is perfectly motionless: at a still more advanced stage, if an abscess has burst into the cavity of the pleura, and caused *pneumo-thorax*, the affected side is not only motionless but distended, and as it were bulging out. The examination of the bared chest, therefore, often affords valuable data for forming a diagnosis in phthisis.

"If we apply the stethoscope to the chest in incipient phthisis the action of the lungs is perhaps little impaired, but we hear the heart beating all over the chest, and at a rate which varies in different subjects from 90 to 100. This symptom, if heard repeatedly, is always of anxious portent, for it denotes the density of the lungs to be increased, thus rendering them a better conductor of sound. At this period air permeates the pulmonary tissue generally, so that percussion is still followed by a comparatively clear sound.

"In the second stage, or that of crude tubercle, the density of the lung is

still further increased, and the heart is consequently heard still more distinctly beating all over the chest. We have also the phenomenon of bronchophony. We hear the louder pulmonary sounds in the healthier lung, and a more feeble sound in the diseased one, accompanied for the most part with bronchial or tracheal mucous sounds. On percussion, also, there is dulness under the clavicles.

"These are the more salient general local and physical phenomena associated with *pulmonary tuberculosis* or phthisis—a disease which can only be confounded with chronic bronchitis. The diagnosis, however, between the two diseases is often extremely difficult, sometimes impossible, the patients equally labouring under cough, expectoration, emaciation, and hectic fever. The history, progress, and combination of symptoms will alone guide to a correct judgment."—Vol. II. p. 844.

Here the principal attention of the student is directed to the increased diffusion of the sounds of the heart as a diagnostic mark of phthisis. The truth is, that by itself this sign is of exceedingly little value; and, unless combined with other general or physical signs, it may be almost disregarded; moreover it does not, as a general rule, become better marked in proportion as the density of the lung increases; in fact, increasing solidification may impede the action of the heart, and the dense lung may prevent the propagation to the surface of the chest of sonorous vibrations. While this comparatively trifling sign is insisted on, not one word is said regarding the really important signs of the early stage of phthisis.

The framing of a sound system of therapeutics is of course the real object of medical science; and that portion of a textbook which is devoted to the treatment of disease should, above all others, be clear and free from ambiguity. In this respect, however, Dr Aitken's work is very far from perfect. We are oftener told what others have recommended than what the author has found useful; and the student is frequently left in doubt as to the line of treatment to be followed, or he is liable to be confused by meeting with statements which appear to contradict one another.

There is great difference of opinion regarding the proper treatment of the diarrhœa of enteric fever. The English plan has generally been to check it, the French to encourage it. Both plans certainly cannot be right; but the student will have some difficulty in learning from Dr Aitken the line of treatment to be followed.

"To restrain excessive diarrhœa, *lime water mixed with milk* in equal parts, and taken as a drink, is found to be beneficial, agreeable, refreshing, and nourishing. It is not clear that the diarrhœa *ought* to be checked. On the contrary, Professor Gairdner of Glasgow is in favour of the French practice of giving saline laxatives, rather than astringents; also of the diligent use of enemata to unload the bowels from below, where anything like abdominal distension has occurred. These enemata may be simply of warm water, to which a little aniseed is added; or, the *asafoetida* enema may be given.

"Dr Huss of Stockholm is of opinion that the diarrhœa during the first stage ought not to be arrested, but abated and mitigated if excessive. If it is suddenly arrested, meteorism is produced, and pains in the intestines; or, vomiting may supervene, with cerebral symptoms, and the febrile phenomena are increased. The diarrhœa is too copious if the evacuations exceed four or five a-day, being of considerable quantity and fluid. Such evacuations weaken

the patient rapidly, and should be mitigated by mucilaginous drinks, such as rice water, infusion of lintseed, decoction of *althæa officinalis*, or ipecacuanha in small and repeated doses. This latter remedy seems to retard the peristaltic action of the intestines, and to lessen the secretion from the mucous membrane. The dose must be regulated so as to avoid vomiting; and the feeling of nausea, which is apt to follow the first dose, soon disappears with continued use. Dr Murchison agrees with the late Dr Todd, who writes as follows: "Restrain diarrhoea and hæmorrhage in typhoid fever, and when you have fairly locked up the bowels, keep them so. Patients will go for four or six days, or even longer, without suffering inconvenience from this state of constipation."—Vol. I. p. 416, 417.

After reading this passage, the student will be at a loss to determine whether he ought to encourage diarrhoea, endeavour to restrain it if excessive, or give remedies with a view to inducing constipation.

The question regarding the use of mercury in inflammation is no doubt a somewhat difficult one; but it is all the more necessary that a teacher should be prepared on this point to recommend a definite line of practice. Dr Aitken appears to be on the whole rather opposed to its employment, though, when treating of the individual inflammations, he almost invariably recommends it. In speaking of the treatment of inflammation in general, he says, in regard to this drug,—“Its sanative power is believed to consist in controlling or preventing the coagulation of lymph; and, for this purpose, it is used as an auxiliary to blood-letting. In the present prevailing type of inflammations, or in typhoid states, it is less useful than in the *sthenic* forms of inflammatory action.” This opinion is adhered to in what is said regarding the treatment of pericarditis. “In all the *constitutional diseases* in which pericarditis occurs as a complication, mercury is certainly contra-indicated. In rheumatism and in Bright's disease, which furnish by far the larger number of cases of pericarditis, mercury is decidedly objectionable.” On the other hand, in speaking of the treatment of peritonitis, the following passage occurs:—“In the milder forms of the disease, when the pain is bearable, and the pulse steady and under 100, one bleeding from the arm, or twenty leeches over the abdomen, together with the administration of calomel and opium in frequently-repeated doses, preceded by moderate purging with neutral salts, are sufficient to effect a cure.” In the more severe cases, the treatment, we are told, must be modified, and, among other things, we are informed that “it is necessary, therefore, to have recourse to mercury; and, with a view to affect the mouth, five grains of calomel, combined with half a grain of opium, so as to give the patient some relief from pain, should be administered every four, six, or eight hours, according to the intensity of the disease. As soon as the mouth is affected the patient may feel relieved, and at this point the mercury should be withheld, and the patient moderately purged with neutral salts, combined with an opiate.” The use of mercury in pneumonia is thus spoken of:—“A combination of antimony and calomel has

saved a much larger number of cases than antimony alone; a quarter of a grain to a grain of the tartrate of antimony, combined with one grain of calomel, given every four or every six hours, according to the severity of the disease, is the treatment in many cases to be adopted. Previous to its use, the bowels should be well cleared out, and after the mercurial effects are indicated by the condition of the gums, the further administration of the remedy should cease."

While we have felt it our duty to make these remarks regarding what we consider grave imperfections in Dr Aitken's work, our readers would go away with a very false impression if they supposed that we did not entertain a high sense of its merits. To these we are fully alive, and we only regret that our limits prevent us from doing more than notice very briefly a few of the points which have principally struck us.

There is no doubt that the essential phenomenon in fever is preternatural heat, and Dr Aitken has conferred a great boon upon the medical profession in this country, by laying before it a clear and intelligent analysis of the observations and conclusions of Wunderlich upon this subject. Attention to the temperature will in future, there is no doubt, form a very important element in the diagnosis and prognosis, not only of continued fevers, but of other pyrexial diseases. The following passage will give some idea of what information may be derived from it:—

"A single observation of abnormally increased temperature (taking into consideration the other conditions of the patient) may sometimes enable the physician to determine the character of the disease present, or the absence of other diseases originally suspected; but it is very rarely indeed that a definitive diagnosis can be based upon a single observation; and the following are some of the few cases in which one observation may be sufficient to establish a certain diagnosis upon:—

"A person who, yesterday, was healthy, exhibits this morning a temperature above 104° Fahr. (32° R.), is almost certainly the subject of an attack of ephemeral fever, or of intermittent fever; and should the temperature rise up to or beyond 106°·3 Fahr. (33° R.), the case will turn out to be one of intermittent fever. Again, a patient under eighteen years of age shows the general symptoms of typhus fever. One evening during the second half of the first week of illness, or during the first half of the second week, the temperature of his body sinks below 103°·3 Fahr. (31°·7 R.) without any external cause—a certain indication that the fever is not typhus. Again, a patient whose temperature rises during the first day of illness up to 106° Fahr. = 33° R., it is certain he does not suffer from typhus. Further, a patient exhibits the general typical symptoms of pneumonia; but during the development of the disease, if his temperature never reaches 101°·7 Fahr. = 31° R., it may be safely concluded that no croupous or soft infiltrating inflammatory new growth is present in the lung. Lastly, if a patient, having suffered from measles, still retains a high temperature after the eruption has faded, it may be concluded that some complicating disturbance is present.

"A single observation of the temperature, *with other means of diagnosis*, will not unfrequently determine whether the disease is one of danger or not. The reason why other means of diagnosis besides temperature ought to be taken into account is, that the observation regarding the temperature might happen to be made during a temporary improvement or aggravation. Bearing

this in mind, the following examples may be quoted, in which an important conclusion may be drawn from a single observation:—In typhus fever a temperature which does not exceed on any evening $103^{\circ}\cdot5$ Fahr. $= 31^{\circ}\cdot8$ R., indicates a probably mild course of the fever, especially if the increase of temperature takes place moderately towards the beginning of the second week. A temperature of 105° Fahr. $= 32^{\circ}\cdot5$ R. in the evening, or of 104° Fahr. $= 32^{\circ}$ R. in the morning, shows that the attack is a very severe one, and forebodes danger during the third week. On the other hand, a temperature of $101^{\circ}\cdot7$ Fahr. $= 31^{\circ}$ R., and below, in the morning, indicates a mild attack, or the commencement of convalescence. Again, in pneumonia, a temperature of 104° Fahr. $= 32^{\circ}$ R., and upwards, indicates a severe attack; and a similar height of temperature in acute rheumatism is always an alarming symptom, foreboding danger, or some complication such as pericardial inflammation. Further, increase of temperature in a mild case of icterus indicates a pernicious turn; in a lying-in woman it is a sign of approaching inflammation; in cases of tuberculosis it shows that the disease is advancing, or that untoward complications are setting in. In short, the presence of the *fever-temperature* (104° Fahr. to 105° Fahr. $= 32^{\circ}$ R. to $32^{\circ}\cdot5$ R.) in any disease indicates that its progress is not checked, and that complications may still occur.”—Vol. 1. p. 47–49.

Dr Aitken gives full and thoroughly practical instructions as to the means of carrying out the necessary observations; and diagrams, indicating the typical ranges of temperature in various febrile diseases, are introduced throughout the book.

The section on Amyloid Degeneration is exceedingly good, containing in a moderate space a very clear account of what is at present known on this subject. We have only one correction to make, and we make it the more readily because Dr Aitken is always prepared to afford to previous observers their full amount of credit. He says, “Dr Stewart of Edinburgh, records cases, *but no dissections*, where he considered amyloid degeneration to have been present. (*Edinburgh Medical Journal* for February 1861.)” The fact, however, is that on referring to this paper it will be found that in two of Dr Stewart’s cases the results of post-mortem examinations were given, which confirmed his diagnosis of the presence of the degeneration in question.

The chapter on Syphilis contains much valuable matter, and we would particularly direct attention to the account given of the syphilitic lesions in internal organs.

The chapter on Animal and Vegetable Parasites is remarkably complete; in fact, it quite takes the place of a special work on the subject. Its value is enhanced by the introduction of numerous appropriate illustrations.

Finally, we may allude to the chapter on Medical Geography, — a subject which is only beginning to attract the attention it deserves, and a knowledge of which is of extreme importance to all who, like the medical officers in the naval and military services of this country, may be called upon to exercise their profession in the most various quarters of the globe.

Part Third.

MEDICAL NEWS.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

MINUTES OF MEETING, *Monday, 25th April 1864.*

ROYAL COLLEGE OF PHYSICIANS, LONDON.

Present,—Dr Burrows, *President*, in the Chair, Dr Alderson, Mr Arnott, Mr Cooper, Dr Acland, Dr Paget, Dr Embleton, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Dr Fleming, Mr Syme, Dr Thomson, Dr A. Smith, Mr Hargrave, Dr Leet, Dr Apjohn, Dr Corrigan, Dr Sharpey, Dr Parkes, Dr Quain, Mr Rumsey, Dr Christison, Dr Stokes. Dr Francis Hawkins, *Registrar*.

The minutes of the last meeting were read and confirmed.

The following Committees were appointed :—

Business Committee.—Dr Andrew Wood, *Chairman*; Dr Embleton, Dr Corrigan, Mr Rumsey.

Finance Committee.—Dr Sharpey, *Chairman*; Mr Arnott, Dr Fleming, Dr Aquilla Smith, Dr Quain.

Committee on Returns received from the Bodies in Schedule (A).—Dr Embleton, *Chairman*; Mr Cooper, Dr Thomson, Dr Leet, Dr Apjohn, Dr Stokes.

1. Moved by Dr Andrew Wood, and seconded by Dr Alexander Wood,—
“That reporters be admitted to the meetings of the General Medical Council.”

First Amendment, moved by Dr Acland, and seconded by Dr Christison,—
“That a committee be appointed to consider, and to report to the present meeting, the advantages and the disadvantages to the business of the Council which may arise from the admission of reporters; and to suggest the various ways in which (should the Council resolve to introduce them) they might be admitted to the Council, Branch Councils, or Committees.”

Second Amendment, moved by Dr Thomson, and seconded by Mr Cooper,—
“That the Council deem it expedient and desirable that their proceedings should be published, and that a committee be forthwith appointed to consider and report upon the best means of accomplishing this object.”

The second amendment was put to the vote, and the numbers were found to be equal for and against it.

The President then gave his casting vote in favour of the amendment.

Dr Andrew Wood required that the names for and against the amendment should be taken down.

For the Amendment.—The President, Mr Arnott, Mr Cooper, Dr Acland, Dr Paget, Dr Storrar, Dr Thomson, Dr Sharpey, Dr Quain, Mr Rumsey, Dr Christison, Dr Stokes.

Against the Amendment.—Dr Alderson, Dr Embleton, Dr Alexander Wood, Dr Andrew Wood, Dr Fleming, Mr Syme, Dr Smith, Mr Hargrave, Dr Leet, Dr Apjohn, Dr Corrigan, Dr Parkes.

The following Members of Council were appointed a committee to consider and report as to the best mode of publishing the Proceedings of the Council,—
Dr Thomson, *Chairman*; Mr Cooper, Dr Storrar, Dr Alexander Wood, Dr Apjohn, Dr Corrigan, Mr Rumsey, Dr Stokes.

Moved by Dr Alexander Wood, seconded by Dr Stokes, and agreed to,—
“That the committee appointed to consider the best means of publishing the Proceedings of the Council be requested to report to-morrow; and that the consideration of that report take precedence of all other business.”

2. Moved by Dr Quain, seconded by Dr Andrew Wood, and agreed to,—
 “That a committee be appointed to revise the Standing Orders.”

The committee to consist of—Dr Christison, *Chairman*; Dr Storrar, Dr Alexander Wood, Dr Corrigan, Dr Quain.

MINUTES OF MEETING, *Tuesday, April 26, 1864.*

1. Dr Thomson presented the following Report of the Committee appointed to consider the Best Means of Publishing the Proceedings of the Council:—

REPORT.

The Committee on Publication of the Proceedings of the Council met this day, and having considered the matter remitted to them by the Council, agreed by a majority to adopt the following Resolutions, and directed the Chairman to lay these Resolutions before the Council as the Report of the Committee:—
 1. That reporters be admitted to the meetings of the Council. 2. That a special reporter be engaged by the Council to prepare a report of the proceedings. 3. That the Council reserve the power of withholding the privilege of admission to reporters, whenever the Council may think fit.

ALLEN THOMSON, *Chairman*.

Moved by Dr Thomson, seconded by Mr Hargrave, and agreed to,—“That the Report be received.”

Moved by Dr Thomson, and seconded by Dr Stokes,—“That the Report be adopted.”

Amendment moved by Mr Syme, and seconded by Dr Andrew Wood,—
 “That the Council proceed to consider the resolutions contained in the Report separately.”

The amendment was carried.

Moved by Mr Syme, and seconded by Dr Andrew Wood,—“That the first resolution of the Report be adopted.”

Amendment moved by Dr Alderson, and seconded by Dr Quain,—“That the second resolution of the Report be first considered.”

The amendment was negatived.

The motion was then put to the vote, and carried.

Moved by Dr A. Smith, seconded by Mr Arnott, and agreed to,—“That the second resolution of the Report be adopted.”

Moved by Dr A. Smith, seconded by Mr Arnott, and agreed to,—“That the third resolution of the Report be adopted.”

Moved by Dr Parkes, seconded by Dr Fleming, and agreed to,—“That the business committee, with the president and the registrar, be appointed a committee to carry into effect the foregoing resolutions.”

2. Dr Christison presented the following Report of the Committee appointed to revise the Standing Orders:—

REPORT.

The Standing Orders Committee, appointed on the 25th instant to revise the Standing Orders of the Council, report that they have for the present confined their attention to Articles 7, 8, 9, and 10 of Section III., “Order of Business.” They recommend that these articles be repealed, and that the following be substituted:—1. That the seconder of a motion may, if he pleases, reserve his speech. 2. That if an amendment be proposed on a motion, the amendment shall be disposed of before any other amendment shall be moved. 3. That such amendment shall first be put to the vote; that if it be negatived, a second amendment may be moved, and shall be disposed of in the same way as the first amendment; and so on until no further amendment shall be proposed. 4. That, should every amendment be negatived, the original motion shall then be put to the vote. 5. That if any amendment be carried, it shall then be put

as a substantive motion, and treated, as to further amendments, and the right of speaking on it, in all respects as an original motion.

Moved by Dr Christison, seconded by Dr Storrar, and agreed to,—“That the Report be received.”

Moved by Dr Alexander Wood, seconded by Dr Parkes, and agreed to,—“That the resolutions of the Report of the Committee on Standing Orders be considered *seriatim*.”

Moved by Dr Alexander Wood, seconded by Mr Arnott, and agreed to,—“That the first resolution of the Report of the Committee on Standing Orders be adopted.”

Moved by Mr Arnott, and seconded by Dr Storrar,—“That the second resolution of the Report be adopted.”

Amendment moved by Dr Alexander Wood, and seconded by Mr Syme,—“That the present Standing Orders, in regard to the number of amendments that may be moved on any motion, be not altered.”

The amendment was negatived.

The motion was then put to the vote, and carried.

Moved by Dr Storrar, seconded by Mr Arnott, and agreed to,—“That the third resolution be adopted.”

Moved by Dr Storrar, seconded by Mr Hargrave, and agreed to,—“That the fourth resolution be adopted.”

Moved by Mr Hargrave, seconded by Mr Arnott, and agreed to,—“That the fifth resolution be adopted.”

3. Moved by Mr Arnott, seconded by Dr Paget, and agreed to,—“That the number of members of the Executive Committee be confined to four, exclusive of the president.”

Moved by Mr Arnott, seconded by Mr Syme, and agreed to,—“That the members of the Executive Committee shall be elected by ballot, by means of marked lists.”

4. Moved by Dr Andrew Wood, seconded by Dr Embleton, and agreed to,—“That the claims of Messrs Spottiswoode, referred to the General Council by the Executive Committee, be now referred to the Finance Committee, to be reported on by them.”

MINUTES OF MEETING, *Wednesday, April 27, 1864.*

1. Moved by Dr Quain, seconded by Mr Hargrave, and agreed to,—“That a committee be appointed to consider and report on the arrangements to be made for producing the next edition of the *British Pharmacopœia*.”

The Committee to consist of—Dr Christison, *Chairman*, Dr Acland, Dr Alderson, Dr Apjohn, Dr Quain, Dr A. Smith.

2. Moved by Dr Storrar, seconded by Dr Sharpey, and agreed to,—“That the Council do now resolve itself into a Committee on Education.”

3. Moved by Dr Storrar, seconded by Dr Alexander Wood, and agreed to,—“That the President be requested to take the Chair, and preside over the Committee.”

1. Moved by Dr Storrar, and seconded by Mr Hargrave,—“That the Committee proceed to consider, one by one, the recommendations of the Council, relating to general and professional education and examination.”

Amendment moved by Mr Syme, and seconded by Dr Andrew Wood,—“That the Committee do now proceed to consider the whole subject of medical education and examination, with the view of preparing a report for the guidance of licensing bodies.”

The amendment was negatived.

The motion was then put to the vote, and carried.

2. Moved by Dr Storrar, and seconded by Dr Sharpey,—“That the first recommendation, viz., ‘That all students pass an examination in general education before they commence their professional studies,’ be adopted.”

Amendment moved by Dr Acland, and seconded by Dr Paget,—“That the first resolution stand as follows:—‘That all students pass an examination on subjects to be included under the head of general education prior to the date from which the commencement of their professional studies is to be reckoned.’”

The amendment was negatived.

The motion was then put to the vote, and carried.

3. Moved by Dr Storrar, and seconded by Dr Sharpey,—“That the second resolution be adopted, viz., ‘That the time of commencing professional studies shall be understood to be the time of commencing studies at a medical school; and that no qualifying body be held to have complied with the recommendation of the Council which shall allow the examination in general education to be passed after the commencement of professional study.’”

Amendment moved by Mr Arnott, and seconded by Dr A. Smith,—“That ‘the time of commencing professional studies shall be understood to be the time of commencing studies at a medical school,’ be transferred to the recommendations on professional education.

The amendment was carried.

Amendment moved by Mr Arnott, and seconded by Dr Acland,—“That the concluding paragraph of the second recommendation, viz., ‘That no qualifying body be held to have complied with the recommendation of the Council which shall allow the examination in general education to be passed after the commencement of professional study,’ be omitted.”

The amendment was carried.

4. Moved by Dr Parkes, and seconded by Mr Hargrave,—“That testimonials of proficiency granted by the national educational bodies, according to the subjoined list, may be accepted, the Council reserving the right to add to, or take from, the list.”

1. A Degree in Arts of any University of the United Kingdom, or of the Colonies, or of such other Universities as may be specially recognised from time to time by the Medical Council.
2. Oxford Responsions or Moderations.
3. Cambridge Previous Examinations.
4. Matriculation Examination of the University of London.
5. Oxford Middle Class Examinations (Senior).
6. Cambridge Middle Class Examinations (Senior).
7. Durham Middle Class Examinations (Senior).
8. Durham Examinations for Students in Art in their second and first years.
9. Durham Registration Examination for Medical Students.
10. Dublin University Entrance Examination.
11. Queen's University, Ireland, Two Years' Arts Course for the Diploma of Licentiate in Arts.
12. Preliminary Examinations at the end of A. B. Course.
13. Middle Class Examinations.
14. Matriculation Examinations.
15. First Class Certificate of the College of Preceptors.
16. “Testamur” granted by Codrington College, Barbadoes.
17. Degree of Associate of Arts granted by the Tasmanian Council of Education, with a Certificate that the Student has been examined in Latin and Mathematics.

Amendment moved by Dr Corrigan, and seconded by Mr Rumsey,—“That testimonials of proficiency granted by the National Educational Bodies, according to the list contained in the third recommendation, be accepted, provided that the examinations conducted by those bodies comprise, at least, the following subjects:—English, Greek, Latin, Mathematics, Arithmetic to the end of Decimal Fractions, One Modern Language.”

The amendment was negatived.

Amendment moved by Dr Alexander Wood, and seconded by Dr Andrew Wood,—“That a minimum standard of preliminary education and examination

shall be fixed by the Council; that testimonials of proficiency granted by the National Educational Bodies may be admitted, provided the Council deem the education required by them to be sufficient; and that a sub-committee be appointed to prepare a minimum standard, to be submitted to the Council for its consideration."

MINUTES OF MEETING, *Thursday, 28th April 1864.*

1. Moved by Dr Storrar, seconded by Mr Hargrave, and agreed to,—“That the Council do now resolve itself into a committee on education.”

2. Moved by Dr Alexander Wood, seconded by Dr Storrar, and agreed to,—“That the President be requested to take the chair, and preside over the committee.”

1. The committee resumed the consideration of the amendment moved at the last meeting by Dr Alexander Wood, and seconded by Dr Andrew Wood, viz.:—“That a minimum standard of preliminary examination shall be fixed by the Council; that testimonials of proficiency granted by the national educational bodies may be admitted, provided the Council deem the education required by them to be sufficient; and that a sub-committee be appointed to prepare a minimum standard to be submitted to the Council for its consideration.”

The amendment was negatived.

The original motion moved at the last meeting by Dr Parkes, and seconded by Mr Hargrave, was then put to the vote, and carried, viz.:—“That testimonials of proficiency granted by the national educational bodies according to the subjoined list, may be accepted, the Council reserving the right to add to or take from the list.”

1. A Degree in Arts of any University of the United Kingdom or of the Colonies, or of such other Universities as may be specially recognised from time to time by the Medical Council.
2. Oxford Responsions or Moderations.
3. Cambridge Previous Examinations.
4. Matriculation Examination of the University of London.
5. Oxford Middle Class Examinations (Senior).
6. Cambridge Middle Class Examinations (Senior).
7. Durham Middle Class Examinations (Senior).
8. Durham Examinations for Students in Arts, in their second and first years.
9. Durham Registration Examination for Medical Students.
10. Dublin University Entrance Examination.
11. Queen's University, Ireland, Two Years' Arts Course for the Diploma of Licentiate in Arts.
12. Preliminary Examinations at the end of A. B. Course.
13. Middle Class Examinations.
14. Matriculation Examinations.
15. First Class Certificate of the College of Preceptors.
16. “Testamur” granted by Codrington College, Barbadoes.
17. Degree of Associate of Arts granted by the Tasmanian Council of Education, with a certificate that the student has been examined in Latin and Mathematics.

2. Moved by Dr Storrar, and seconded by Mr Arnott,—“That the fourth recommendation of the Council be adopted, viz.:—‘That the examination in general education be eventually left entirely to the examining boards of the national educational bodies recognised by the Medical Council.’”

Amendment moved by Dr Stokes, and seconded by Mr Syme,—“That, with the view of saving time, a sub-committee be appointed for the purpose

of preparing a report on the subject of medical education, which may form a definite basis for the discussions of the question in the General Council."

The amendment was negatived.

The motion was then put to the vote, and carried.

3. Moved by Dr Storrar, and seconded by Dr Sharpey,—"That the fifth recommendation of the Council be adopted, viz.:—'That no certificate of proficiency in general education, which does not affirm the proficiency of the candidate in Latin, be deemed a sufficient proof of preliminary education previous to the commencement of professional studies.'"

Amendment moved by Dr Corrigan, and seconded by Dr Apjohn,—"That no certificate of proficiency in general education, which does not affirm an acquaintance with Greek and Latin, be deemed a sufficient proof of preliminary education previous to the commencement of professional studies."

The amendment was negatived.

The motion was then put to the vote, and carried.

4. Moved by Dr Storrar, and seconded by Dr Sharpey,—"That the sixth recommendation be adopted, viz.:—'That students who cannot produce any of the testimonials referred to in the third resolution, be required to pass an examination in Arts, established by any of the bodies named in Schedule (A) of the Medical Act, and approved by the General Council, provided that such examination be in every case conducted by a special board of examiners in Arts.'"

Amendment moved by Dr Corrigan, and seconded by Mr Hargrave,—"That the words after 'General Council,' in the fifth line of the sixth recommendation, be omitted; and that the recommendation be adopted as thus amended."

The amendment was carried.

5. Moved by Dr Storrar, and seconded by Dr Sharpey,—"That the seventh recommendation be adopted, viz.:—'That, without professing to lay down any complete scheme of general education for persons intending to become members of the medical profession, the committee recommend that the scheme of examination in Arts of the licensing bodies be, as nearly as practicable, similar to that of any of the national educational bodies above specified.'"

This motion was put to the vote, and negatived.

6. Moved by Dr Storrar, seconded by Dr Embleton, and agreed to,—"That the eighth recommendation be adopted as follows:—'That all medical students be required to be registered.'"

7. Moved by Dr Storrar, seconded by Dr A. Smith, and agreed to,—"That the ninth recommendation be adopted, viz.:—'That the lists of students registered be closed within fifteen days after the commencement of each session or term.'"

8. Moved by Dr Storrar, and seconded by Dr A. Smith,—"That the tenth recommendation be adopted, viz.:—'That no student beginning professional study after September 1861 be registered who has not passed an Arts examination, in conformity with Resolutions 3 or 6.'"

Amendment moved by Dr Alexander Wood, and seconded by Dr Acland,—"That a sub-committee be appointed to consider the best scheme of registering medical students."

The amendment was carried, and the following committee appointed:—Dr Alexander Wood, chairman; Mr Arnott, Dr Embleton, Dr Fleming, Dr Apjohn, Dr Stokes.

MINUTES OF MEETING, *Friday, 29th April 1864.*

1. Read—The following letter and correspondence:—

Catholic University of Ireland,
86 Stephen's Green, Dublin, 18th April 1864.

Sir,—I have the honour to enclose, for the information of the General Medical Council, a copy of a correspondence between our institution and the Registrar of the Branch Council, Ireland.

By this it will be seen that we have been recommended by the Branch Council to make application to the General Medical Council, in order to obtain recognition of our entrance examination.

I have also done myself the honour to forward two copies of our Calendar for the present year, by which it will be seen that our University gives as complete an education as institutions which are recognised by your Council (pp. 48 to 52).

May I beg that you will do us the favour to submit to the Council our application to have our entrance examination recognised by them, and may I hope that the Council will favourably entertain our request?

I am, Sir, your obedient servant,

(Signed) THOMAS SCRATTON, Sec. Cath. Univ.

(COPY.)

Branch Medical Council, Ireland, 35 Dawson Street, Dublin, March 9th, 1864.

Sir,—I am directed by this Branch Council to request that you will have the goodness to inform me whether any students are pursuing their professional studies in your medical school who had not previously passed an examination in general education recognised by the General Medical Council; and, if so, that you will be so good as to state their number.—I am, Sir, your obedient servant,

(Signed) WM. EDW. STEELE, M.D., Registrar.

(COPY.)

86 Stephen's Green, S., 18th March 1864.

Sir,—In reply to your letter of the 9th inst., I beg to say that I have learned from the Honorary Secretary of our Medical Faculty, that the information you ask has already been supplied through the Registrar of the Royal College of Surgeons of Ireland.

However, in order to guard against some mistakes into which your Council may be led by these formal returns, I am directed further to state, that several of our medical students have attained considerable proficiency in general education, although we have no official mode of knowing whether they have passed an examination recognised by your Central Council. The authorities of this University are most anxious to advance the general education of our medical students, and will be happy to carry out as far as possible the wishes of the General Medical Council, and the regulations it may make for that purpose. By offering exhibitions and other advantages, the Rector and University Council have endeavoured to induce the students in Medicine to matriculate in Arts also, and to attend lectures in Philosophy and Letters, and in Science.

A large number are now availing themselves of these advantages, and have passed our entrance examination; and of that number eleven have passed the Scholarship (as it is called in this University) or *Responsions* at the end of their second year of general studies, while two have passed the B. A. examination, and several are preparing to pass that examination in the course of this year.

As it appears from the recent census returns, that in 1861, of 954 medical students in Ireland, 329, or more than one-third, were Catholics, over whom, without doubt, the Catholic prelates at the head of this institution have considerable influence, the Rector and Council of this University think they may safely say, that a much larger number would enter for general education could we offer them the inducement of a Degree in Arts or Science recognised by law.

In conclusion, I am directed to send, for the information of your Branch Council, and of the General Medical Council, two copies of our University Calendar for this year, inviting your attention to our regulations regarding matriculation and degrees (pp. 48 to 52). You will there see that even for entrance into this University we require a knowledge of one Greek and one Latin book from the following list; and also of Arithmetic, Algebra (as far as Simple Equations, inclusively), Euclid, &c.

Entrance or Matriculation Examination.

Each candidate for entrance must be recommended by the person who last had the care of his education, and by his bishop, or by one of the clergymen of his parish. He presents himself in the first place to the Dean of the house which he wishes to join, or to the Vice-Rector, if he wishes to be an extern.

Candidates for entrance will be examined :

1. In the Christian Doctrine.

2. In any one Greek and any one Latin book, of their own selection, from the following entrance lists :

Greek.—Herodotus, Book I. Xenophon's Anabasis. Plato, Apologia Socratis. Lucian, Walker's Selections. Homer's Iliad, Books I. II. III. Sophocles, any play. Euripides, any play. *Latin*.—Virgil, Georgics, any two books; Æneid, any four books; Bucolics, with one book of Georgics, or two of Æneid. Horace, Odes, any three books; Satires or Epistles. Cicero, Select Orations, viz., in Catilinam, I.-IV., pro Milone, pro Lege Maniliâ, and pro Archiâ. Livy, Books I. II. III., or IV. V.

3. They will further be examined in—Arithmetic; Algebra, as far as Simple Equations, inclusively; Euclid, Books I. II.; English Composition; the Rudiments of French; The Elements of Ancient and Modern History; The Elements of Modern Geography; Latin Prose Composition.

The degree examination which we prescribe is as high as that required by other universities.

We respectfully submit that even the former of these examinations indicates a state of education fully equal to that recognised by you, and we therefore respectfully request the General Medical Council to recognise the examinations presented by this university.—I am, Sir, your obedient servant,

“THOMAS SCRATTON, *Sec. Cath. Univ.*

“Wm. Edw. Steele, Esq., M.D., Registrar, 35 Dawson Street.”

(COPY.)

“Branch Medical Council, Ireland, 35 Dawson Street, Dublin,
“21st March 1864.

“SIR,—I beg to acknowledge receipt of your letter of the 18th inst., together with two copies of the Calendar of your university, for which latter permit me to offer my thanks.

“Referring to the latter part of your letter, in which you apply for the recognition by the Council of the entrance examination of the university, I take the liberty of suggesting your applying to the General Medical Council, 32 Soho Square, London, W., the registrar of which is Dr Hawkins, on the subject, it being very unlikely that the Branch Council will meet previously to the assembling of the former in London.—I am, Sir, your obedient servant,

“WM. EDW. STEELE, M.D., *Registrar.*

“Thomas Scratton, Esq., Secretary, Catholic University, Stephen's Green.”

Moved by Dr Christison, seconded by Dr Storrar, and agreed to,—“That the following answer be returned by the registrar to the communication now before the Council :—

‘SIR,—I have laid before the General Medical Council your letter of the 18th instant, requesting that the Entrance Examination of ‘The Catholic University of Ireland’ should be recognised among the examinations in preliminary education received from the various chartered or incorporated educational bodies; and in reply I am directed to request you will have the kindness to transmit to the General Medical Council a copy of the Charter or Act of Incorporation of the ‘Catholic University.’”

2. Dr Christison presented the following Report of the Committee appointed on the 28th April 1864, relative to the Pharmacopœia :—

REPORT.

The Committee report—1. That it is desirable to make further arrangements during the present session of Council, for preparing the next edition of the British Pharmacopœia. 2. That a committee of the Council be appointed to superintend the preparing for the press, and the editing of the work, and to submit the same to the Council for approval, in proof. 3. That the gentlemen already nominated in London, Edinburgh, and Dublin, for the purpose of reporting from time to time on the improvements in pharmacy, be requested to continue their services, and that their report be communicated to the Pharmacopœia Committee of the Council. 4. That an editor or editors shall be appointed by the Pharmacopœia Committee, who shall prepare the work in all its details, under their control.

Moved by Dr Storrar, seconded by Dr Christison, and agreed to,—“That the Report of the Committee relative to the Pharmacopœia be received and entered on the minutes.”

3. Moved by Dr Andrew Wood, seconded by Mr Hargrave, and agreed to,—“That the Council resolve itself into a Committee on Education, and that the President be requested to take the chair.”

1. Dr Alexander Wood presented the following Report from the Sub-Committee on the best scheme of Registering Medical Students :—

REPORT OF THE SUB-COMMITTEE ON REGISTRATION OF MEDICAL STUDENTS.

Your Sub-Committee is of opinion that the registration of medical students, if properly conducted, is a matter of primary importance, as giving security to the Council and the profession,—1. That every student has passed an examination in arts before commencing his professional studies. 2. That the exact date at which a student has commenced his professional studies has been ascertained and registered, so as to show how far the recommendations of the Council in these respects have been complied with.

The chief difficulties which past experience has shown to exist, appear to your Committee to be,—1. The want of a sufficient distinction between students commencing their studies and those who may be commencing their second, third, or fourth sessions. 2. The fact that many students enter at several different schools at the same time.

Having regard to these difficulties, your Sub-Committee begs to recommend the following regulations, as at once simple and practical :—1. That the registration be placed under the charge of the Branch Registrars. 2. That each student be only once registered, and that when he first enrolls himself as a medical student. 3. That the Registrar of each school of medicine, or other authorized person, keep a list of all students entering for the first time at that school, agreeably to the subjoined form. 4. That the register at each school be closed within fifteen days after the commencement of each session or term. 5. That these lists, as soon as possible thereafter, be transmitted, along with the certificates of each student having passed an arts examination, to the Branch Registrar of that division of the kingdom where the school is situated, and that he from them frame an accurate register of medical students of that division of the kingdom where he has charge. 6. That the register of medical students so prepared by the Registrars, after examination by the several Branch Councils, be transmitted to the Registrar of the General Council, who shall, under direction of the Executive Committee, print the same in alphabetical order, and supply a copy of this authorized list to each of the bodies in Schedule A to the Medical Act. 7. That the several licensing bodies be requested, after October 1868, to abstain from examining any candidate for license or degree whose name does not appear on the authorized list of medical students. 8. That the Branch Councils be desired to take means to make these regulations known to the medical students at the various medical schools.

ALEXANDER WOOD, *Chairman.*

FORM OF REGISTER OF MEDICAL STUDENTS.

Name.	Age last Birthday.	Prelim. Examin. and Date.	Date of Registration.	Place of Study.

Moved by Dr Andrew Wood, seconded by Dr Embleton, and agreed to,—
“That the Report of the Sub-Committee on Registration of Medical Students be received and entered on the Minutes.”

Moved by Dr Andrew Wood, seconded by Dr Embleton, and agreed to,—
“That the consideration of the Report on the Registration of Medical Students be deferred till after the discussion of the question of Professional Education.”

2. Moved by Dr Storrar, and seconded by Dr Paget,—“That the Seventeenth Recommendation of the Council be adopted, viz.:—‘That the age of twenty-one be the earliest age at which any Professional License shall be obtained.’”

Amendment, moved by Mr Syme, and seconded by Dr Andrew Wood,—
“That the Committee proceed to consider the Subjects and Course of Study requisite for a Medical Professional Education.”

The amendment was carried.

3. Moved by Mr Syme, and seconded by Dr Andrew Wood,—“That the Council proceed to frame a Course of Study for Medical Education, which may be recommended to the Licensing Bodies.”

The debate on this subject not being concluded at six o'clock, it was moved by Dr Thomson, seconded by Dr Parkes, and agreed to,—“That the Committee do now adjourn.”

MINUTES OF MEETING, *Saturday, 30th April 1864.*

Moved by Dr Thomson, seconded by Dr Parkes, and agreed to,—“That the Council resolve itself into a Committee on Education, and that the President be requested to take the chair.”

The debate was resumed on the motion, which was moved at the last meeting by Mr Syme, and seconded by Dr Andrew Wood, viz.,—“That the Council proceed to frame a Course of Study for Medical Education, which may be recommended to the Licensing Bodies.”

Amendment, moved by Dr Thomson, and seconded by Dr Sharpey,—“That, instead of proceeding to frame a Course of Study for Medical Education, etc., the Council adopt the following resolution,—‘That, viewing with general approval the conditions required by the different bodies enumerated in Schedule A of the Medical Act, of candidates for a qualification, the Council do not think it expedient, for the present, to proceed to frame a complete or formal scheme of professional education and examination. But in order to indicate the general nature of their views upon this subject, they resolve to communicate the following recommendations for the guidance of the various Licensing Boards,—“1. That twenty-one years be the earliest age at which a professional license can be obtained. 2. That no license be obtained at an earlier period than four years after the registration of the candidate as a Medical Student. 3. That the course of study required for a license shall comprehend not less than four winter sessions, or three winter and two summer sessions at a recognised medical school; and that evidence shall be produced that the remaining period of the four years has been passed in the acquisition of professional knowledge. 4. That the professional examination be divided into at least two parts; that the first of these, embracing the preparatory branches of study, be not undergone before the conclusion of the second sessional year of nine months; and that the final examination be not undergone till the completion of the whole prescribed course of study, nor at an earlier period than three

years and nine months after the commencement of professional study. 5. That the professional examinations be conducted partly in writing and partly *visà voce*; and in all parts which admit of it, also practically and by demonstrations. 6. That the Council recommend to the several Licensing Bodies, that the courses of instruction required by them severally should be framed in such a manner as to secure a due share of attention, both to the preparatory and to the final, or more strictly practical, branches, and by class examinations, and all other means which may be deemed proper, to promote as far as possible the self-culture and useful practical education of those who seek to obtain a license. The Council would accordingly suggest to these bodies, that it is desirable to avoid enforcing attendance upon a large number of courses of instruction during the same term of study, and to arrange the subjects of examination in such a manner as will guide the student in the most approved order of study. 7. That the regulation of the extent and duration of courses of lectures and instruction be left to the authorities of the several medical schools; and that in the case of branches of scientific study, not purely professional, which are included in the curriculum, the scope and extent of attainment required of the candidates be indicated by means of a published conspectus of the subjects of examination to be issued by the several Examining Boards. 8. That, with a view to secure fairness and efficiency in examinations, the Council resolve to institute a system of supervision or inspection, to be conducted in the meantime for each division of the country, under the direction of its Branch Council; the results of which supervision are to be reported annually to the General Council." At a quarter before six o'clock the debate was adjourned.

2. Moved by Dr Acland, seconded by Dr Embleton, and agreed to,—“That the Council resume.”

1. Moved by Dr Quain, seconded by Mr Rumsey, and agreed to,—“That the Report of the Committee on the Pharmacopœia be adopted.”—(See p. 1127.)

MINUTES OF MEETING, *Monday May 2, 1864.*

1. Moved by Dr Quain, seconded by Mr Syme, and agreed to,—“That the Pharmacopœia Committee consist of four members,—Dr Christison, chairman, Dr Sharpey, Dr Apjohn, Dr Quain.”

2. Moved by Dr Acland, seconded by Dr Andrew Wood, and agreed to,—“That the Council resolve itself into a Committee on Education, and that the President be requested to take the chair.”

1. The debate was resumed on the motion, which was moved by Mr Syme at the meeting of the 29th April (see p. 1128), and seconded by Dr Andrew Wood, viz.—“That the Council proceed to frame a Course of Study for Medical Education, which may be recommended to the Licensing Bodies,” and on the amendment, moved by Dr Thomson, and seconded by Dr Sharpey, viz.—“That, instead of proceeding to frame a Course of Study for Medical Education, etc., the Council adopt the following resolution:—That, viewing with general approval the conditions required by the different Bodies enumerated in Schedule A of the Medical Act, of candidates for a qualification, the Council do not think it expedient, for the present, to proceed to frame a complete or formal scheme of professional education and examination. But, in order to indicate the general nature of their views upon this subject, they resolve to communicate the following recommendations for the guidance of the various Licensing Boards:—1. That twenty-one years be the earliest age at which a professional license can be obtained. 2. That no license be obtained at an earlier period than four years after the registration of the candidate as a Medical Student. 3. That the course of study required for a license shall comprehend not less than four winter sessions, or three winter and two summer sessions, at a recognised medical school; and that evidence shall be produced that the remaining period of the four years has been passed in the acquisition of professional knowledge. 4. That the professional examination be divided

into at least two parts; that the first of these, embracing the preparatory branches of study, be not undergone before the conclusion of the second sessional year of nine months; and that the final examination be not undergone till the completion of the whole prescribed course of study, nor at an earlier period than three years and nine months after the commencement of professional study. 5. That the professional examinations be conducted partly in writing and partly *viva voce*; and in all parts which admit of it, also practically and by demonstrations. 6. That the Council recommend to the several licensing bodies, that the courses of instruction required by them severally should be framed in such a manner as to secure a due share of attention, both to the preparatory and to the final, or more strictly practical branches, and by class examinations, and all other means which may be deemed proper, to promote as far as possible the self-culture and useful practical education of those who seek to obtain a license. The Council would accordingly suggest to these bodies, that it is desirable to avoid enforcing attendance upon a large number of courses of instruction during the same term of study, and to arrange the subjects of examination in such a manner as will guide the student in the most approved order of study. 7. That the regulation of the extent and duration of courses of lectures and instruction be left to the authorities of the several medical schools; and that in the case of branches of scientific study, not purely professional, which are included in the curriculum, the scope and extent of attainment required of the candidates be indicated by means of a published conspectus of the subjects of examination to be issued by the several examining boards. 8. That with a view to secure fairness and efficiency in examinations, the council resolve to institute a system of supervision or inspection, to be conducted in the meantime for each division of the country, under the direction of its Branch Council; the results of which supervision are to be reported annually to the General Council."

The amendment was put to the vote, and negatived.

The original motion was also negatived.

2. Moved by Dr Storrar, and seconded by Dr Christison,—“That the seventeenth recommendation of the Council be adopted.”

MINUTES OF MEETING, Tuesday, May 3, 1864.

1. Moved by Mr Hargrave, and seconded by Mr Cooper,—“That the Council resolve itself into a Committee on Education, and that the President be requested to take the chair.”

Amendment, moved by Dr Christison, and seconded by Dr Storrar,—“That the Council do not resolve itself into a General Committee of Education; but that a Select Committee be now appointed for the purpose of considering the Recommendations of the Council on Professional Education, and the various Motions and Notices of Motions as to Education, which have been submitted to the Council, with the view of preparing such a Report on Medical Education as may be presented, and, if approved, passed during the present session.”

The amendment was carried.

Moved by Dr Christison; seconded by Mr Syme, and agreed to,—“That the following be the Select Committee on Education, Dr Christison, chairman, Mr Arnott, Dr Paget, Dr Storrar, Dr Alexander Wood, Dr Thomson, Dr Apjohn, Dr Parkes, Dr Stokes.

2. Read—The following reference to the Branch Councils, made by the General Council on the 3d June 1863—(See Minutes, vol. ii. p. 244),—“That the Report of the Medical Acts Amendment Committee be forwarded to the Branch Councils for their observations thereon.”

The observations of the Branch Councils, in pursuance of the foregoing reference, having been read, it was moved by Dr Corrigan, seconded by Dr A. Smith, and agreed to,—“That the Observations of the Branch Councils be entered on the Minutes.”

BRANCH COUNCIL FOR ENGLAND, *March 4, 1864.*

(See Minutes Branch Council for England, No. 20, p. 7.)

Moved by Dr Storrar, seconded by Mr Arnott, and agreed to,—“ That the Branch Council having given their attention to the Report of the Medical Acts Amendment Committee, forwarded by the General Council to the Branch Councils for their observations thereon, are of opinion that it is not expedient at the present time to engage in fresh legislation.”

SCOTTISH BRANCH OF GENERAL COUNCIL, *2d April 1864.*

(See Minutes Branch Council for Scotland, No. 29, p. 89.)

On the motion of Dr Andrew Wood, it was resolved,—

I. That the Branch Council have considered the proposed amendments on the Medical Act, remitted to them by the Medical Council for their observations thereon.

II. That the Branch Council believe that much of the dissatisfaction of the Medical Profession, with reference to the working of the Medical Act, has arisen from the faulty construction of some parts of that Act.

III. That, in an especial manner, this has been the case regarding two points, viz., 1st, The failure of Clause XL. to carry out its objects of protecting the registered practitioner, and of enabling the public to distinguish between qualified and unqualified practitioners; and, 2d, The insufficiency of Clause XX. as regards provision for the enforcement of the Regulations issued by the Medical Council in reference to Medical Education.

IV. That the Branch Council, without expressing a definitive approval of any of the subjoined Clauses which have been proposed to be substituted for Clause XL., consider the subject well worthy of the mature consideration of the Medical Council.¹

V. That the Branch Council approve of the Clause proposed to be substituted for Clause XX., viz. :—“ It shall be lawful for the General Council to lay down such regulations respecting the Education and Examination of Practitioners in Medicine, Surgery, and Pharmacy, as may appear to them fitted to insure adequate knowledge and skill in the several departments of the Profession; and the said General Council shall then submit said regulations to her Majesty’s most Honourable Privy Council. And the said regulations, if sanctioned by the said Privy Council, shall then be obligatory upon all Universities, Colleges, and other bodies enumerated in Schedule (A) to this Act.”

VI. That, in regard to the proposed clauses for the regulation of pharmacy, the Branch Council, whilst they consider it very desirable that there should be certain legal regulations as to the sale of drugs in this country, with a view to the safety of the public, think that that object would be best carried out by means of special statute.

¹ DRAFT I.—“ Any person not legally possessing any of the qualifications under Schedule (A) to this Act, who shall profess the practice of Medicine or Surgery, taking or using the name or title of a Physician, Doctor of Medicine, Doctor, Licentiate in Medicine or Surgery, Bachelor of Medicine, Surgeon, General Practitioner or Apothecary, or any name implying that he is a legally qualified Practitioner, shall,” etc., etc.

DRAFT II.—“ Any person professing to undertake the treatment or cure of diseases, who shall wilfully and falsely pretend to be, or take or use the name of a Physician, Doctor, Bachelor of Medicine, Surgeon, General Practitioner, or Practitioner in Medicine or Surgery, Apothecary, or any name, title, prefix, addition or description contained in Schedule (A) to this Act, or any other name, title, prefix, addition, or description implying that he is a legally qualified Medical Practitioner, not being possessed of a legal medical qualification which would entitle him to registration, shall, upon a summary conviction for any such offence, pay a sum not exceeding £20.”

DRAFT III.—Clause taken from the New Medical Act for Victoria :—“ On and after the day of 186 , it shall not be lawful for any person, unless registered under this Act, to pretend to be, or take or use the name or title of a Physician, Doctor of Medicine, Licentiate in Medicine or Surgery, Master in Surgery, Bachelor of Medicine, Doctor, Surgeon, Medical or General Practitioner, or Surgeon, Apothecary, or Accoucheur, or Licentiate or Practitioner in Midwifery, or any other Medical or Surgical name or title; and every unregistered person so offending shall forfeit and pay a sum not exceeding £50, to be recovered in a summary way before any two Justices of the Peace, by any person suing for the same in any Court of Petty Sessions.”

VII. That the Branch Council consider that the Medical Council, at their approaching meeting, should take the subject of the amendment of their Medical Acts into early consideration, with a view to their submitting the result of their deliberations regarding it (should they resolve that legislation is called for) to the Secretary of the Home Department, during the Session of the Council.

IRISH BRANCH OF GENERAL COUNCIL, 14th March 1864.

(See Minutes Branch Council for Ireland, No. 50, p. 2.)

The Council resumed the consideration of the proposed amendments of the Medical Act, and altered certain of the Sections as follows :—

PREAMBLE—Omitting the first sentence, to the word "Practitioners," also the words "and" and "moreover," in the following lines. Thus :—"Whereas it is necessary for the safety and protection of the public, towards securing adequately educated Practitioners in the several departments of Medicine, Surgery, and Pharmacy : Be it therefore enacted, etc. etc."

SECT. XXIX.—Introducing the words, "Registrar of each Branch," after the word "The" in the first line. Thus :—"The Registrar of each Branch Council may refuse to register any person who may have been convicted, in England or Ireland, of any felony or misdemeanour, or in Scotland of any crime or offence; and if any registered person shall be so convicted, or shall, after due inquiry, be judged by the General Council to have been guilty of infamous conduct in a professional respect, whether before or after registration, the General Council may, if they see fit, direct the Registrar to erase the name of such person from the Register."

SECT. XL.—Omitting the words, "or Surgeon," between the words "Practitioner" and "Apothecary." Thus :—"On and after the day of , 186 , it shall not be lawful for any person, unless registered under this Act, to pretend to be, or take or use the name or title of Physician, Doctor of Medicine, Licentiate in Medicine or Surgery, Master in Surgery, Bachelor of Medicine, Doctor, Surgeon, Medical or General Practitioner, Apothecary or Accoucheur, or Licentiate or Practitioner in Midwifery, or any other medical or surgical name or title; and every unregistered person so offending shall forfeit and pay a sum not exceeding £20, to be recovered in a summary way before the Justices of the Peace."

RESOLVED,—That the bill as now amended be adopted, and communicated to the Registrar of the General Council, in accordance with the resolution of the said Council.

Moved by Dr Corrigan, and seconded by Dr Apjohn :—"That the proposed Medical Bill, as amended by the Medical Acts Amendment Committee of last year, be forwarded to our solicitor, with directions to have it drafted, as soon as possible, and returned to the Executive Committee; that the Executive Committee take means to have the bill so drafted laid on the table of the House of Commons, at the commencement of next Session of Parliament; that a copy of the bill so drafted be forwarded without delay by the Executive Committee to the Branch Councils, to the several bodies enumerated in Schedule (A) of the Medical Act, to the Pharmaceutical Society, and the press; so that all parties concerned may have ample opportunity, in the interval between publication of the draft bill and next meeting of Parliament, of considering the bill, and of suggesting such amendments as they may desire; that the General Medical Council meet at as early a period as may be necessary next year, to consider the various amendments that may be suggested in the interval, in order to insert in the bill such amendments as may meet their approbation."

Amendment, moved by Dr Storrar, and seconded by Mr Arnott :—"That looking to the great diversity of opinion which exists in Great Britain, in regard to the objects which it is desirable to obtain by an amendment of the Medical Acts, it is not at present expedient that the Council should engage in fresh legislation."

Moved by Dr Alexander Wood, seconded by Mr Hargrave, and agreed to :—"That the debate on the amendment of the Medical Acts be adjourned until Wednesday the 4th of May."

3. Dr Sharpey having presented the Report of the Finance Committee, it was moved by Dr Sharpey, and seconded by Dr Paget:—"That the Report be received and entered on the Minutes."

REPORT OF THE FINANCE COMMITTEE.

The Finance Committee beg leave to present, in the Table subjoined, a statement of the estimated and actual income and expenditure of the year 1863; also an estimate of the income from ordinary sources, and of the expenditure, as far as the Committee are able to judge, for the year 1864. Appended is a statement of the Pharmacopœia account, exhibiting the expense incurred in the preparation and publication of the *British Pharmacopœia*, from the commencement of the undertaking up to the 19th of April 1864, except some incidental charges, estimated not to exceed £10; also the number of copies printed, and the present state of the sale of the work, with the proceeds of the sale up to the same date.

The sums advanced in former years on account of the Pharmacopœia have been included in the annual accounts laid before Parliament, and defrayed, along with the ordinary expenses of those years, by a per-centage rate on the income of the three Branch Councils, as directed by the Medical Act. The Committee recommend that, when all the expenses of the publication shall have been defrayed out of the proceeds of the sale of the work, the surplus be reserved for investment as a special fund, available for the purposes of the Pharmacopœia.

The Committee further recommend that £50 be presented to Dr Garrod in acknowledgment of special services rendered in the publication of the Pharmacopœia, which were undertaken by him at the request of the Executive Committee; also that gratuities be given of £30 to Mr Bell and £20 to Mr Roope, the clerks, for extra trouble and efficient service in conducting the sale, by which the charge for publishers' commission is saved to the Council.

The Committee have examined into Messrs Spottiswoode's account referred to them by the Council. It appears that in February 1862, Messrs Spottiswoode laid in a stock of new type and the requisite supply of paper for the work, by direction of the Pharmacopœia Committee, on the understanding that the printing would be immediately proceeded with, but that in consequence of the delay which subsequently took place these materials lay long unemployed. Messrs Spottiswoode estimate at £75 their loss occasioned thereby, and also from the printing being deferred to the busy season of 1863, instead of being done in the summer, as expected. They do not press this as a claim, but submit it for equitable consideration, and the Committee recommend that it should be allowed. With regard to an extra claim for binding, submitted by Messrs Spottiswoode, the Committee regret that, after giving it their careful consideration, they do not feel themselves justified in recommending that it should be allowed.

In conclusion, the Committee recommend that two members of the Executive Committee be annually appointed to audit the accounts of the General Council.

W. SHARPEY, *Chairman*.

	Estimated income for the year 1863.				Actual income for the year 1863.				Estimated income for the year 1864.			
Fees received by—	£	s.	d.	£	s.	d.	£	s.	£	s.	d.	
Branch Council for England	2500	0	0	...	2729	10	0	...	2600	0	0	
" Scotland	550	0	0	...	824	10	0	...	650	0	0	
" Ireland	650	0	0	...	832	15	0	...	650	0	0	
	3700 0 0				4386 15 0				3900 0 0			
Dividends received by—												
Branch Council for England	616	0	0	...	609	0	0	...	610	0	0	
" Scotland	78	0	0	...	74	1	10	...	60	0	0	
" Ireland	69	0	0	...	69	17	4	...	69	0	0	
	763 0 0				752 19 2				739 0 0			
Sale of Registers . . .	...			330 0 0	...			317 14 0	...			310 0 0
Penalties . . .	...			...	...			9 13 5				
	£4793 0 0				£5167 1 7				£4949 0 0			

Expenses of—	Estimated expenditure for the year 1863.				Actual expenditure for the year 1863.				Estimated expenditure for the year 1864.						
	£	s.	d.		£	s.	d.		£	s.	d.				
General Council	...	...	...	3068	0	0	...	...	*3338	9	11	...	3350	0	0
Branch Council for England	580	0	0	...	1660	11	4	...	1720	0	0	...	1720	0	0
" Scotland	270	0	0	...	259	2	3	...	270	0	0	...	270	0	0
" Ireland	300	0	0	...	290	14	1	...	300	0	0	...	300	0	0
				1150	0	0		1210	7	8		1290	0	0	
				4218	0	0		4549	7	7		4640	0	0	
Balance in favour of Medical Council,				575	0	0		917	14	0		0	0	606	
				£4793	0	0		£5467	1	7		£4949	0	0	

"BRITISH PHARMACOPEIA."—STATEMENT.

	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	
Paper, printing, and binding, 13,000 copies, 8vo	1392	0	0				Produce of 12,053 copies 8vo, after allowing the usual discount to book-sellers	4446	3	0			
Ditto ditto 15,000 copies, 32mo	657	2	6	2049	2	6							
Meeting of General Council, October 28th, 1862, on account of the Pharmacopœia	406	7	0				Due from Her Majesty's Government, for 62 copies	23	0	0	4469	3	0
Amounts voted by the General Council, on account of the Pharmacopœia:							Produce of 2366 copies, 32mo, after allowing the usual discount to book-sellers	491	8	0			
See Minutes, vol. i., p. 6	500	0	0				Due from Her Majesty's Government, for 364 copies, 334 being in sheets	62	3	0	553	11	0
" " vol. i., p. 91	500	0	0							5022	14	0	
" " vol. ii., p. 129	600	0	0				Balance			1206	12	5	
Dr Apjohn, vol. ii., pp. 233-4	94	10	0										
Dr MacLagan, do.	154	7	0										
London Secretary, do.	150	0	0										
Edinburgh Secretary, do.	100	0	0										
Dublin Secretary, do.	100	0	0										
London Editor, do.	75	0	0										
Edinburgh Editor, do.	50	0	0										
Dublin Editor, do.	50	0	0										
Sub-Committees, £500 each	1500	0	0	3873	17	0							
				6329	6	6							
Deduct balance returned by Dr Garrod, late Secretary of the Pharmacopœia Committee	100	0	1										
				£6229	6	5				£6229	6	5	

NOTE.

The number of the 8vo edition, paid for	12,053			The number of the 32mo edition, paid for	2,366		
Ditto, owing for by Her Majesty's Government	62			Ditto, owing for by Her Majesty's Government	364		
	12,115				2,730		
The number given to members of Council, Pharmacopœia Committee, Stationers' Hall, British Museum, etc.	55			The number given to members of Council, Pharmacopœia Committee, Stationers' Hall, British Museum, etc.	55		
	12,170				2,785		
Stock on hand	830			Stock on hand	12,235		
	13,000				15,000		

	£	s.	d.			£	s.	d.
Cash received for copies in 8vo and				Value of 12,235 copies 32mo in stock		£2500	0	0
32mo sold	£4937	11	0	Value of 830 8vo ditto		290	0	0
„ Due for ditto		85	3					
	<u>£5022</u>	14	0			<u>£2790</u>	0	0

* This includes £160, 11s. 6d. for printing 2000 copies of the register, to be supplied to Her Majesty's Government.

† This increase is on account of £200 of the Registrar's salary being now charged to the Branch Council for England.

4. Read, the following letters and correspondence,—

United Society of Chemists and Druggists,
20 New Ormond Street, W.C., London, August 24, 1863.

Gentlemen,—I have the honour to inform you that I am instructed by the Executive Committee of the United Society of Chemists and Druggists, to state, that they have appointed a deputation to wait upon your honourable body in relation to the contemplated alterations in the present Medical Act, and to request you will signify at what time and place it may suit your convenience to receive such deputation; and I have the further honour to be, Gentlemen, your obedient servant,

C. F. BUOTT, Secretary.

The Council of Medical Education and Registration, 32 Soho Square, W.

United Society of Chemists and Druggists,
Offices, 20 New Ormond Street, W.C., London, February 6, 1864.

Sir,—On the 25th August last I received your letter, acknowledging the receipt of one of a previous date from the Executive Committee of this Society, requesting an interview for a deputation to the General Council of Medical Education and Registration, to urge upon their attention the very injurious nature of certain clauses in the proposed Amended Medical Act affecting the interests of chemists and druggists.

In your reply you informed me that the Council would receive this application of the Committee when they met, but added that a considerable time would elapse before they would be again convened. Not having heard from you since, I presume the Council have not yet resumed their sittings.

In the meantime the executive of the United Society of Chemists and Druggists have convened public meetings, to receive the wishes of the chemists and druggists throughout the kingdom.

At all these meetings the objectionable clauses were strongly condemned. At the London meeting, held at the United Society's Offices, in November last, certain resolutions were unanimously passed, which I have now the honour to forward through you to the General Council of Medical Education and Registration.—I am, Sir, your obedient servant,

C. F. BUOTT, Secretary.

Francis Hawkins, Esq., M.D., etc. etc., Registrar,
General Council of Medical Education and Registration.

Copy of Resolutions unanimously carried at a Public Meeting of Chemists and Druggists, held at the offices of the United Society of Chemists and Druggists, 20 New Ormond Street, W.C., on Friday, November 27, 1863. Mr Alderman Dakin, President, in the chair.

1. That the chemists and druggists now assembled recognise the desirability of giving all possible encouragement to scientific and educational qualification for the trade of a chemist and druggist, but they consider themselves, in common with their brethren, quite competent to accomplish all needful reform in their own body, and repudiate the 56th and 57th clauses of the proposed Act of the Medical Council as being unjust in principle, and an unwarrantable attempt to interfere with their rights as independent citizens. 2. That an Act of Incorporation, based upon a recognition of existing rights, and subjecting every future candidate for the trade to an educational test, as suggested by the United Society of Chemists and Druggists, is most desirable, and this meeting would urge upon the trade the necessity of a combined and determined effort for its attainment. 3. That the proceedings of this meeting be made known to the Medical Council, with the intimation that the chemists and druggists of this country require to be consulted upon any measure affecting their own interests, and that they will accept of no proposal which does not acknowledge the necessity of an incorporation of the entire trade, giving them the right of self-government. 4. That a copy of these resolutions, together with copies of the objectionable clauses in the proposed Medical Act, and the suggestions of the United Society of Chemists and Druggists for an incorporation of the trade, be forwarded to the members of Parliament for the City of London and the

Metropolitan boroughs, requesting them to withhold their support from any measure affecting the interests of chemists and druggists which has not been submitted to the judgment of the trade.

Correct copy of resolutions certified by Mr Alderman Dakin, chairman of the meeting, and President of the United Society of Chemists and Druggists.

C. F. BUOTT,

Secretary of the United Society of Chemists and Druggists.

20 New Ormond Street, February 6, 1864.

5. Moved by Dr Smith, seconded by _____, and agreed to,—
“That a copy of the two volumes of the minutes of the Medical Council be presented to each of the universities and corporations in schedule (A) of the Medical Act.”

6. Moved by Mr Arnott, seconded by Dr Stokes, and agreed to,—“That a copy of the letters from the bodies mentioned in schedule (A) to the Medical Act, explanatory of their regulations, be presented to each of the universities and corporations in schedule (A).”

MINUTES OF MEETING, *Wednesday, May 4, 1864.*

1. *Read*—The following Memorial, addressed to the General Council of Medical Registration and Education:—

We, the undersigned Registered Medical Practitioners of Banbury, beg respectfully to call your attention to a consideration of the 40th section of the Act, which imposes a penalty for “falsely pretending to be a registered person,” and which has recently received a practical interpretation in one of the Metropolitan Police Courts; with the view that the different registrars under the Act should be instructed by the Medical Council to take proceedings against offenders, rather than allowing the law to be vindicated by private individuals. The attention of your Memorialists has been drawn to this by a most flagrant case of an unregistered person, without a diploma, or even medical education, being allowed to assume the title of “Dr,” and to practise in this town in defiance of this Act.

ARTHUR B. RYE, F.R.C.S., L.S.A.

R. STANTON WISE, M.D., M.R.C.S., &c.

JOHN GRIFFIN, M.D., M.R.C.S.L.

THOMAS CLARKE, M.R.C.S.L.

RICHARD GRIMBLY, M.R.C.S., L.S.A.

C. L. H. PEMBERTON, M.R.C.S. Eng., L.S.A.

WILLIAM T. DOUGLAS, M.R.C.S., L.S.A.

Moved by Dr Andrew Wood, seconded by Dr Acland, and agreed to,—“That the Memorial from the Practitioners of Banbury be received and entered on the minutes; and that the Registrar be directed to write in reply that it has been received, and to transmit to the Memorialists a copy of so much of a Report, adopted by the Council on the 4th of August 1859, as refers to the subject in question.”—(*See Minutes*, vol. i. p. 35.)

2. *Read* the following Letter:—

“King and Queen’s College of Physicians in Ireland, Dublin, 29th April 1864.

“SIR,—I am directed to inform you that on the 2d May 1863, the following resolution was passed by this College:—That the appointment of Inspectors of Apothecaries’ Shops by the College of Physicians, be discontinued after the publication of the *British Pharmacopœia*; and the College desire to convey to the General Medical Council their conviction that some legislative measure is necessary for the inspection of compounding establishments, and for ensuring the competency of the persons who conduct them.—I am, Sir, your obedient servant,

“L. ATTHILL, *Fellow and Registrar.*

“To the Registrar, General Medical Council, London.”

Moved by Dr A. Smith, seconded by Dr Leet, and agreed to,—“That the letter be received and entered on the Minutes.”

3. The adjourned Debate was resumed on the motion, moved at the last Meeting by Dr Corrigan, and seconded by Dr Apjohn, viz.:—“That the proposed Medical Bill, as amended by the Medical Acts Amendment Committee of last year, be forwarded to our Solicitor, with directions to have it drafted as soon as possible, and returned to the Executive Committee; That the Executive Committee take means to have the Bill so drafted laid on the table of the House of Commons at the commencement of next Session of Parliament; That a copy of the Bill so drafted be forwarded without delay by the Executive Committee to the Branch Councils, to the several Bodies enumerated in Schedule (A) of the Medical Act, to the Pharmaceutical Society, and the Press; so that all parties concerned may have ample opportunity, in the interval between publication of the Draft Bill and next meeting of Parliament, of considering the Bill, and of suggesting such amendments as they may desire; That the General Medical Council meet at as early a period as may be necessary next year, to consider the various amendments that may be suggested in the interval, in order to insert in the Bill such amendments as may meet their approbation,”—and on the amendment moved by Dr Storrar, and seconded by Mr Arnott, viz.:—“That, looking to the great diversity of opinion which exists in Great Britain, in regard to the objects which it is desirable to obtain by an amendment of the Medical Acts, it is not at present expedient that the Council should engage in fresh legislation.”

The amendment was negatived.

Second amendment, moved by Dr Alexander Wood, and seconded by Dr Sharpey: “That the Council, while appreciating the labour and care bestowed by the Medical Acts Amendment Committee on the heads of a Medical Bill proposed in their report, regret that it is impossible, at this late period of the session, to enter on the full consideration of so wide and important a subject; That the Council request the Branch Councils, in the interval between this session and the succeeding one, to consider how Clauses XX., XXXI., and XL. of the Medical Act could be best amended; “That the Council resolve to appoint an early day, at their meeting next Session, for the consideration of the whole subject.”

The second amendment was *carried*.

Dr Corrigan required that the names of the majority and minority should be taken down.

Majority.—Dr Alderson, Dr Paget, Dr Embleton, Dr Storrar, Dr Alexander Wood, Mr Syme, Dr Leet, Dr Sharpey, Mr Rumsey, Dr Christison.

Minority.—Mr Arnott, Dr Andrew Wood, Dr Fleming, Dr A. Smith, Mr Hargrave, Dr Apjohn, Dr Corrigan, Dr Parkes, Dr Stokes.

The amendment was then put, as a substantive motion.

Amendment, moved by Dr Andrew Wood, and seconded by Mr Hargrave: “That it be remitted to the Executive Committee to have drafted by a Parliamentary Solicitor a Bill, having regard chiefly to clauses XX., XXXI., and XL. of the Medical Act; that the Bill so drafted be transmitted confidentially to the Branch Councils for their opinion; that thereafter the Bill be re-drafted, so as to be in a condition to be submitted to the General Medical Council at its next meeting.”

The amendment was negatived.

The substantive motion was then put, and carried.

3. A letter having been read from Mr Thomas Edis, of Barton Street, Gloucester, requesting that his name might be restored to the *Medical Register*, as it had been omitted through change of residence, it was moved by Dr Storrar; seconded by Dr Andrew Wood; and agreed to: “That the name of Thomas Edis be replaced on the Register.”

4. *Read*—The following letter :—

“ Royal College of Physicians, Edinburgh, 5th November 1863.

“ Dr Hawkins, Registrar, General Council of Medical Education and Registration.

“ Sir,—By direction of the Royal College of Physicians of Edinburgh, I beg to intimate to you, on behalf of the General Council of Medical Education and Registration of the United Kingdom, that at a meeting of the Royal College of Physicians of Edinburgh, duly called and held here on 3d inst., the following motion was submitted to the College and carried : “ It having been proved to the satisfaction of the College, that Robert Jacob Jordan, a Licentiate of this College, has been guilty of conduct unbecoming the character of a Physician, in publishing, or causing to be published, an indecent work, entitled, ‘ The Illustrated and Descriptive Catalogue of the Subjects contained in the London Anatomical Museum ; to which is annexed the Guide to Masculine Vigour—by a Physician : ’ that the said Robert Jacob Jordan be deprived of his license from the College : That the College thereon declared that the said Robert Jacob Jordan was deprived of his license from this College, and of the Diploma as a licentiate of this College, conferred on him on the 14th June, 1859, and of all the rights and privileges which, as a licentiate of this College, he does enjoy.”

In intimating this deprivation of Mr Robert Jacob Jordan’s license from this College to you as Registrar of the General Council of Medical Education and Registration of the United Kingdom, the College directed me to request of you “ that any qualifications derived from this College and entered in the *Medical Register*, as pertaining to Mr Jordan, may be expunged.”—I am, Sir, your most obedient Servant,

CHRISTOPHER DOUGLAS,

Clerk to the Royal College of Physicians of Edinburgh.

Moved by Dr Alexander Wood, seconded by Dr Andrew Wood, and agreed to : “ That the name and qualification, as licentiate of the Royal College of Physicians of Edinburgh, of Mr Robert Jacob Jordan, be removed from the Register.”

5. A letter having been read from the Secretary of a reading society at Croydon, respecting an indecent publication, it was moved by Dr Corrigan ; seconded by Dr A. Smith, and agreed to : “ That, as advised by their Solicitor, there does not appear to the Medical Council to be any evidence to connect the Publication with any registered Practitioner, and that the Publication referred to does not therefore come within the province of the Council.”

MINUTES OF MEETING, *Thursday, May 5, 1864.*

1. *Read* the following letter :—

Cawood, Selby, Yorkshire, 25th April 1864.

To the General Medical Council of Education and Registration.

Gentlemen,—Will you kindly permit me to appear before you to plead my cause for permission to present myself at one of the Examining Boards.

I have suffered much from my former misconduct, and have, since my name was erased from the *Medical Register*, striven all in my power to redeem the past, by attending the lectures and hospital practice required by candidates for examination (having not done so prior to that time, which caused the medical men in this district to be so bitter against me. This feeling, I am happy to say, has subsided).

I have held for some years (and continue) the appointments of medical officer to several clubs and townships, besides having a large midwifery practice ; I therefore trust, as I am truly penitent for my former imprudence, you will take my case into your kind consideration, and not compel me to continue in practice unqualified, as I undoubtedly must without your help, and my gratitude for your kindness shall be evinced by my future life.

Anxiously waiting your reply, I am, Gentlemen, your obedient servant,

RICHARD ORGAN.

Moved by Dr Alexander Wood, seconded by Mr Syme, and agreed to,—
 “That the Council decline to accede to the request of Mr Organ.”

The Report of the Select Committee on Education was presented by Dr Christison.

REPORT.

The Committee appointed on 3d May, relative to professional education, have to report, that they have carefully considered all the points referred to them by the Council. They understand the object of the Council to be, that this Report should comprise a statement of all recommendations as to professional education, arising from the late discussion in Committee of Council, as to which there appears to be a general agreement in the Council, and which may be sent forth this Session as recommendations to the several licensing bodies of the kingdom, or suggestions to them for information. The Committee trust that they have kept this object steadily in view in the following recommendations :

I.—Registration.

The Committee recommend under this head, that the regulations proposed in the Report of the Sub-Committee on Registration (see page 1127) be adopted, with a slight change in No. 3 of these regulations; which will then stand as follows :—1. That the registration of medical students be placed under the charge of the branch registrars. 2. That each student be only once registered, viz., when he first enrolls himself as a medical student. 3. That each licensing body request, from each school of medicine under its jurisdiction, a list of all students entering on the study of medicine for the first time at that school, agreeably to the subjoined form.

Form of Register of Medical Students.

Name.	Age last Birthday.	Prelimin. Examin. and Date.	Date of Registration.	Place of Study.

4. That the register at each school be closed within fifteen days after the commencement of each session or term. 5. That these lists, as soon as possible thereafter, be transmitted, along with the certificates of each student having passed an arts examination, to the Branch Registrar of that division of the kingdom where the school is situated, and that he from them frame an accurate register of medical students of that division of the kingdom of which he is Registrar. 6. That the registers of medical students so prepared by the Registrars, after examination by the several Branch Councils, be transmitted to the Registrar of the General Council, who shall, under direction of the executive Committee, print the same in alphabetical order, and supply a copy of this authorized list to each of the bodies in Schedule (A) to the Medical Act. 7. That the several licensing bodies be requested, after October 1868, to abstain from examining any candidate for license or degree, whose name does not appear on the authorized list of medical students. 8. That the Branch Councils be desired to take means to make these regulations known to the medical students at the various medical schools. 9. That exceptions allowed by the licensing bodies to any of the preceding regulations as to registration, together with the reasons for such exceptions, be transmitted to the Branch Council of the part of the United Kingdom in which they have been granted.

II.—Age for License to Practise.

The Committee, after having taken into consideration Mr Rumsey's notice of motion—that the earliest age for obtaining any license to practise medicine or

surgery, should be twenty-two, recommend that the resolution 17 of the recommendations of Council in 1863, p. 7, be adhered to in the following shape:—1. That the age of twenty-one be the earliest age at which any professional license shall be obtained; and that the age shall, in all instances, be duly certified.

III.—*Professional Study.*

The Committee have taken into consideration the notices of motion as to professional study, given by Dr Thomson, Dr Parkes, and Dr Storrar, and have come to the following recommendations, in which not only these gentlemen, but likewise every other member of Committee present, have concurred:—1. That no license be obtained at an earlier period than after the close of the last Winter Session, of four years of study, after the registration of the candidate as a medical student. 2. That the course of study required for a license shall comprehend attendance during not less than four Winter Sessions, or three Winter and two Summer Sessions, at a recognised medical school; and that evidence shall be produced that the remaining period of the four years has been passed in the acquisition of professional knowledge. 3. That, in reference specially to Dr Parkes' notice of motion, as to duration of Sessions, and of Courses of Lectures, the regulation of the duration of Sessions, and the extent and duration of Courses of Lectures and Instruction, be left for the present to the several licensing bodies. 4. That it be recommended to the several licensing bodies, that the courses of instruction required by them should be framed in such a manner as to secure a due share of attention, both to preparatory branches, and to those more strictly connected with the practice of medicine and surgery: and that it be suggested accordingly to these bodies, that their regulations should be such as to prevent attendance upon lectures from interfering with hospital and clinical study. 5. That, while avoiding for the present all other details, by which this object may be attained, it be recommended, that no subject of lectures be enforced by regulation, to be attended oftener than once. 6. That the Council intimate, that they will view with approbation any encouragement held out by the licensing bodies to students to prosecute the study of the natural sciences before they engage in studies of a strictly professional character. 7. That the several licensing bodies be requested to furnish a short statement of the mode in which their examinations are now conducted, whether by written, oral, or practical examination, and of the length of time a candidate is under examination in each, or all of these ways.

IV.—*Examinations.*

The Committee have considered the subject of examinations with peculiar care; which was rendered imperative by the proofs brought before the Council in the late discussion on education, that the examinations of the licensing boards, however conscientiously carried on under the present system, are not always sufficient for their purpose. The subject is one confessedly of much difficulty. The Committee have resolved to recommend:—1. That the licensing boards be advised to encourage the periodical examination of students at their several classes. 2. That the final examinations of the licensing boards be so carried on as to be an efficient test of the practical acquaintance of candidates with the several branches of medical knowledge, and especially with the practice of medicine and surgery. 3. That the professional examination for any license be divided into two parts; the first embracing the primary or fundamental branches of medicine; and the second the branches directly connected with the practice of medicine and surgery; that the former be not undergone till after the close of the Winter Session of the second year of professional study; and the latter, or final examination, not till after the close of the Winter Session of the fourth year of such study. 4. That the examination in Chemistry, Botany, and Natural History may be undergone at an earlier period. 5. That the professional examinations be conducted both in writing and orally; and that they be practical in all branches in which they admit of being made so. 6. That the professional examinations be held by the several

licensing bodies, except in special cases, at stated periods, to be publicly notified. 7. That returns from the licensing bodies in Schedule (A) be made annually on the 1st of January, and in the subjoined form, to the General Medical Council, stating the number and names of the candidates who have passed their first as well as their second examinations, and the number of those who have been rejected at the first and second examinations respectively; and that the Registrar forward a sufficient number of forms, with a notice for their being returned, in due time.

Form of Return of Examinations, and their Results.

PASSED.				REJECTED.	
1st Examination.		2d Examination.		1st Examination.	2d Examination.
No.	Name.	No.	Name.	No.	No.

V.—Supervision of Examinations.

So much has been truly said in the late discussions in the Council, as to the duty which lies with the Council to carry out the enactments of the Medical Act relative to the supervision of the examinations of the licensing boards, that the Committee have felt a great desire to recommend some definite course which the Council might at once pursue for establishing such supervision.

They fear, however, that the Medical Act is defective in this respect, inasmuch as it has not contemplated either the great amount of time and labour required to carry on a really effective supervision of the very numerous examinations of the licensing boards of the kingdom, some of which do not meet for examination at the seats of the Branch Councils, or the amount of qualifications and professional position necessary to constitute a staff of efficient visitors of examinations; and, consequently, has omitted to provide the means of remunerating them for their important services. But, notwithstanding this obstacle, the Committee recommend that a trial of visitation be immediately made on such a scale as may be a guide to the Council for further regulations on the subject, at a future meeting. For this end they recommend that the Branch Councils be instructed severally to organize a set of trial visitations on a scale which may enable them to report upon their success, the conditions for efficiency, and the requisite means for rendering them adequately extensive.

VI.—Suggestions for Obtaining Information.

To these recommendations, which it seems to them advisable that the Council resolve now to adopt, the Committee think it right to add others, as to which the opinions of the licensing bodies, and of the medical schools connected with them, should be requested in time for the consideration of the Council at its next Session, viz.:—1. Whether, in the opinion of the licensing bodies, the commencement of professional study, by which the duration of it must be regulated, should be held to be only entrance on such study at a recognised medical school? 2. Whether a "Medical School" may be better or otherwise defined than as one where there is an opportunity of studying at a general hospital, containing at least eighty beds for patients, and also a teacher of practical anatomy recognised by a licensing body? 3. Whether entrance on apprenticeship should be held as another way of constituting the commencement of professional study? 4. Whether the same privilege be extended to pupilage under a registered practitioner, who has charge of a union work-house, a dispensary, or an hospital, though destitute of medical or surgical teachers? 5. Whether any other mode of study may be similarly recognised as the commencement of professional study? 6. Whether, looking to the

great extension of the primary or fundamental sciences of medicine during the last forty years, the subjects embraced in courses of lectures on these sciences may not be better arranged and treated than now; so that they may be made more applicable than they are at present to the practical instruction of medical students, as distinguished from general students? 7. Whether it be advisable or not, and if advisable, whether, and how, it may be practicable to adopt, in part at least, the principle of *ad eundem* examinations; so that a candidate, who has been satisfactorily examined, in part or completely, for any professional title conveying the right of practice, shall not be subject to re-examination on precisely the same branches by another examining body, before whom he may appear as candidate for the same, or a different, qualifying professional title? 8. Whether it be advisable and practicable, for the relief of candidates for licenses from superfluous examinations, to establish in England, Scotland, and Ireland severally, a conjoint examining board, before whom candidates may be subjected to a single series of examinations for the "Double Qualification" of physician and surgeon. 9. Whether it be desirable that the oral and practical parts of the professional examinations should be so conducted as to be open to registered medical practitioners and registered medical students. *Lastly*,—In conformity with the notices of motions by Dr Acland, the Committee recommend the Council to appoint a Select Committee, to consider and report at the next Session of the Council, what are the subjects of examination which should be required of all students prior to commencing the prescribed course of professional education, and what are the professional subjects of examination which should be required of all candidates before they receive the license to practise medicine, or surgery, or medicine and surgery.

R. CHRISTISON, *Chairman*.

Moved by Dr Christison, seconded by Dr Andrew Wood, and agreed to,—
"That the Report be received and entered on the minutes."

2. Moved by Dr Corrigan, and seconded by Dr A. Smith,—
"That the Standing Order, paragraph 12, Section III., 'Order of Business,' be amended so as to read as follows:—'That in cases when a division takes place, any member of the Council may require that the names or numbers of the majority and minority be entered on the minutes.'"

Amendment, moved by Dr Alexander Wood, and seconded by Mr Hargrave, —
"That Standing Order, paragraph 12, Section III., be altered to the following effect:—'That in all cases when a division has taken place, any Member of the Council may require that the names or numbers of the majority and minority, and of those declining to vote, be entered on the minutes.'"

The amendment was carried, and having been then put as a substantive motion, was agreed to.

3. Moved by Dr A. Smith, and seconded by Dr Corrigan,—
"That the names of persons which have been removed from the Register by order of the General Medical Council, or by the Executive Committee, in accordance with the Standing Orders, be printed annually, as an Appendix to the Register."

The motion was negatived.

4. Moved by Dr A. Smith, seconded by Dr Alexander Wood, and agreed to,—
"That the Executive Committee be authorized to remove from the Register the qualification of any person who has been deprived of his diploma or license by any of the Bodies in Schedule (A) of the Medical Act."

"That the Executive Committee be authorized to remove from the Register the name of any person who has been expelled, or deprived of his diploma or license by any of the Bodies in Schedule (A) of the Medical Act, provided the said person has not registered any other qualification."

5. Moved by Dr A. Smith, seconded by Dr Alexander Wood, and agreed to,—
"That the Standing Order, Chap. VIII., paragraph 6, be amended as follows,—
"That, should the Council remove the name of any person from the Register, under Section XXVIII. or XXIX. of the Medical Act, due intimation of the same be made to all the bodies enumerated in Schedule (A) to the Act."

6. Moved by Mr Syme, and seconded by Mr Rumsey,—
"That no member

of the Medical Council shall speak upon any subject for more than a quarter of an hour, without permission of the Council."

The motion was negatived.

My Syne required that the numbers of the majority and minority, and of those who declined to vote, be entered on the minutes.

Majority,	.	.	.	.	.	11
Minority,	.	.	.	.	.	6
Declined to vote,	.	.	.	.	.	5

7. Moved by Dr Andrew Wood, seconded by Dr Embleton, and agreed to,—
"That the various Standing Orders which have been agreed upon during this session be referred to the Committee on Standing Orders, in order that they may be incorporated with the Standing Orders of the Council, and with instructions to that Committee to number the Orders."

Moved by Dr Christison, seconded by Dr Andrew Wood, and agreed to,—
"That Dr Embleton be appointed Chairman of the Committee on the Standing Orders, in room of Dr Christison, resigned."

8. Moved by Dr Alexander Wood, seconded by Dr Andrew Wood, and agreed to,—
"That the Council take into consideration the Report of the Committee on the requirements of the Commissioners for administering the Laws for the Relief of the Poor in Ireland, deferred from last Session."—(No. 54, Sect. 26, vol. ii. pp. 231, 232, and 233.)

Moved by Dr Alexander Wood, and seconded by Dr Andrew Wood,—
"That, whereas the Commissioners for administering the Laws for the Relief of the Poor in Ireland require a license in Midwifery from candidates for employment under them, the Medical Council requests the President to communicate with the Home Secretary, for the purpose of inducing him to request the Commissioners to receive the certificates of all the bodies in Schedule (A) to the Medical Act, examining in Midwifery, thereby carrying out the reciprocity in practice, which it was one object of the Medical Act to secure."

The motion was carried.

Dr Alexander Wood required that the names of the majority and minority be entered on the minutes.

Majority.—The President Dr Alderson, Mr Cooper, Dr Acland, Dr Paget, Dr Embleton, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Dr Fleming, Mr Syne, Dr Sharpey, Dr Parkes, Mr Rumsey, Dr Christison, Dr Stokes.

Minority.—Dr Smith, Mr Hargrave, Dr Apjohn, Dr Corrigan.

Moved by Dr Alexander Wood, and seconded by Mr Syne,—
"That the Registrar be instructed not to enter on the Register the licenses in Midwifery of the King and Queen's College of Physicians in Ireland, or of the College of Surgeons of Ireland, inasmuch as these qualifications do not appear on Schedule (A) to the Medical Act."

Amendment, moved by Dr Apjohn, and seconded by Dr Corrigan,—
"That before undertaking to give directions to the Executive Committee to depart from the regulations under which the Register has hitherto been published, the opinion of Sir Hugh Cairns and Mr Hobhouse, referred to in the Report of the Committee on the Requirement of the Poor-law Commissioners, etc. (see Minutes, vol. ii. p. 232), be read by the Registrar."

The amendment was negatived.

Second amendment, moved by Dr Parkes, and seconded by Mr Arnott,—
"That both as regards future registration, and also the registrations already effected, a case be drawn out, without delay, by the Executive Committee and the Solicitor to the Council, and be submitted to the Law Officers of the Crown, as to the legality of registering licenses in Midwifery which do not appear in Schedule (A) to the Medical Act, and that the Executive Committee be authorized to act on the legal opinions thus obtained."

The second amendment was carried; and having been put as a substantive motion, was agreed to.

9. Moved by Dr Quain, and seconded by Dr Embleton,—
"That at future meetings of the Council, the first hour after the chair has been taken each day

be appropriated to the consideration of such matters of business of the Council as are not likely to call for lengthened debate."

The motion was negatived.

MINUTES OF MEETING, *Friday, May 6, 1864.*

1. Moved by Dr Christison, and seconded by Dr Storrar,—“That the Standing Orders, in regard to Order of Business, be suspended, and that the Council proceed to consider the Report of the Select Committee on Professional Education.”

The motion was negatived.

2. A correspondence having been read, which had taken place between the Poor-law Board, the Guiltcross Union, the Faculty of Physicians and Surgeons of Glasgow, and the Registrar of the General Medical Council, in reference to the question, whether the license of the Faculty of Glasgow confers a qualification both in medicine and in surgery,

Moved by Dr Fleming, seconded by Dr Alexander Wood, and agreed to,—“That, in reply to the inquiry made by the Secretary of the Poor-law Board in regard to the powers conferred by the license of the Faculty of Physicians and Surgeons of Glasgow, the Registrar be instructed to intimate that the question involving the legal interpretation of a charter, is one which the Council is not competent to answer.

3. Read, the following letter from the Director-General of the Army Medical Department :—

“Army Medical Department, 9th April 1864.

“SIR,—The President and Fellows of the King and Queen's College of Physicians in Ireland having applied to the Secretary of State for War to have the letters “Phys.” inserted in the *Army List* after the names of such medical officers as may possess the qualification of that body, and Lord De Grey having determined to have the subject referred to the General Medical Council, with a view of eliciting their opinion as to the expediency of recognising such a title as a means of distinguishing such licentiates from other legally qualified medical practitioners, I shall feel obliged by your having the matter so submitted to the General Medical Council at their next meeting.—I have the honour to be, Sir, your most obedient humble servant, J. B. GIBSON, *Director-General*.

“The Secretary, General Council of Medical Education, 32 Soho Square, W.”

Moved by Dr Corrigan, seconded by Dr Smith, and agreed to,—“That it is the opinion of the General Medical Council that it would not be advisable to insert the letters ‘Phys.’ but that it is the opinion of the General Medical Council that the several medical qualifications which army surgeons possess, as inserted in the *Medical Register*, might be entered after their names in the *Army List*.”

4. Moved by Dr Corrigan, and seconded by Dr A. Smith,—“That a letter from the King and Queen's College of Physicians, respecting the license granted by the Apothecaries' Hall of Ireland, be read.”

The previous question was moved by Dr Paget, seconded by Dr Acland, and agreed to.

Moved by Dr Alexander Wood, seconded by Mr Syme, and agreed to,—“That the Standing Order, Sect. III., No. 5, be suspended; and that the Council do now proceed to consider the Report of the Select Committee on Education.”

Moved by Dr Fleming, seconded by Dr Storrar, and agreed to,—“That the Report of the Select Committee on Education be held as read.”

Moved by Dr Christison, seconded by Dr Stokes, and agreed to,—“That Regulation No. 1, Sect. I., of the Report of the Select Committee, be adopted, viz.—“That the Registration of medical students be placed under the charge of the Branch Registrars.”

Moved by Dr Christison, seconded by Dr Stokes, and agreed to,—“That

Regulation No. 2, Sect. I., be adopted as thus amended, viz.—‘That every student be registered at the commencement of professional study.’”

Moved by Dr Christison, seconded by Dr Stokes, and agreed to,—“That Regulation No. 3, Sect. I., be adopted, as thus amended, viz., ‘That the several Licensing Bodies be requested to furnish to the Branch Registrars, at the beginning of January annually, a list of students who have been registered for the first time during the preceding year, according to the subjoined form.’”

Form of Register of Medical Students.

Name.	Age last Birthday.	Prelim. Examin. and Date.	Date of Registration.	Place of Study.

Moved by Dr Christison, seconded by Dr Stokes, and agreed to,—“That Regulation No. 4, Sect. I., be adopted as thus amended, viz., ‘That the register of each licensing body be closed within fifteen days after the commencement of each session or term;’ and that Regulations 4 and 5 be transposed.”

Moved by Dr Christison, seconded by Mr Arnott, and agreed to,—“That Regulation No. 5, Sect. I., be adopted as thus amended, viz., ‘That from the lists of the licensing bodies each Branch Registrar shall frame an accurate register of medical students of the division of the United Kingdom of which he is registrar.’”

Moved by Dr Christison, seconded by Mr Arnott, and agreed to,—“That Regulation No. 6, Sect. I., be adopted as thus amended, viz., ‘That the register of medical students so prepared by the registrars, after examination by the several Branch Councils, be transmitted to the Registrar of the General Council, who shall, under direction of the Executive Committee, prepare and print an alphabetical list of all registered students, and supply a copy of this authorized list to each of the bodies in Schedule (A) to the Medical Act.’”

Moved by Dr Christison, seconded by Dr Stokes, and agreed to,—“That Regulation No. 7, Sect. I., be adopted as thus amended, viz., ‘That the several licensing bodies be requested, after October 1868, to abstain from examining any candidate for license or degree, whose name does not appear on the authorized list of medical students, as having passed the preliminary examination in arts, or whose name is not already on the *Medical Register*.’”

Moved by Dr Christison, seconded by Dr Stokes, and agreed to,—“That Regulation No. 8, Sect. I., be adopted, viz., ‘That the Branch Councils be desired to take means to make these regulations known to the medical students at the various medical schools.’”

Moved by Dr Christison, seconded by Dr Stokes, and agreed to,—“That Regulation No. 9, Sect. I., be adopted as thus amended, viz., ‘That exceptions allowed by the licensing bodies to any of the preceding regulations as to registration, together with the reasons for such exceptions, be transmitted in a separate list to the Branch Council of the part of the United Kingdom in which they have been granted.’”

Moved by Dr Christison, and seconded by Dr Stokes,—“That Regulation No. 1, Sect. II., be adopted, viz., ‘That the age of twenty-one be the earliest age at which any professional license shall be obtained; and that the age shall, in all instances, be duly certified.’”

Amendment moved by Mr Rumsey, and seconded by Mr Hargrave,—“That Regulation No. 1, Sect. II., be adopted with the addition—‘That after the year 1868, the earliest age at which any professional license shall be obtained, be twenty-two.’”

The amendment was negatived.

Mr Rumsey required that the numbers be entered on the minutes.

Majority, ...	11
Minority, ...	7
Declined to vote, ...	5

The motion was then put and carried.

Moved by Dr Christison, seconded by Dr Stokes, and agreed to,—“That the further consideration of the Report of the Select Committee be now adjourned.”

6. Moved by Dr A. Smith, seconded by Dr Andrew Wood, and agreed to,—“That the Standing Orders be suspended, and that the Council meet to-morrow at twelve, instead of two o'clock.”

7. Moved by Dr Christison, seconded by Dr Andrew Wood, and agreed to,—“That the Standing Orders be suspended, and that the Council now proceed to ballot for the members of the Executive Committee.”

A ballot having been taken, Mr Arnott, Dr Acland, Dr Sharpey, and Dr Quain, were found to be elected.

MINUTES OF MEETING, *Saturday, May 7, 1864.*

1. Moved by Dr Acland, seconded by Mr Cooper,—“That, in the absence of the President, Mr Arnott be requested to take the chair.”—Agreed to.

2. A letter having been read from the King and Queen's College of Physicians in Ireland, and also two letters referred to in that letter, moved by Dr A. Smith, seconded by Dr Corrigan,—“That the letter from the King and Queen's College of Physicians, respecting the license granted by the Apothecaries' Hall of Ireland, along with the letters Nos. 2 and 3, referred to in that letter, be entered on the minutes.”

The motion having been put to the vote, the chairman declared that the motion was not carried, the numbers for and against it being equal.

The Chairman being called upon to give a casting vote, declined to do so; whereupon Dr Andrew Wood stated that he intended to raise the question at a future time, whether the president or chairman for the time be not bound to give a casting vote, “in cases of an equality of votes.”

Dr Storrar required that the names of those who voted for and against the motion, and of those who did not vote, be entered on the minutes.

For, ...	6
Against, ...	6
Declined to vote, ...	1

The President took the chair at two o'clock.

Moved by Dr A. Smith, seconded by Dr Corrigan,—“That when the General Medical Council expressed its opinion, in the resolution of June 2, 1863, ‘that registered licentiates of the Apothecaries' Company of Dublin are, as apothecaries, entitled to practise medicine in Great Britain and Ireland,’ it did not intend to convey that the license of the Apothecaries' Company of Ireland should be considered for the public service as a medical qualification, to be recognised as equivalent to a degree in medicine, or to a license from a College of Physicians; or to express an opinion on the claim of the Apothecaries' Hall of Ireland to give a license in medicine, the question being one involving the legal interpretation of an Act of Parliament, which the Council is not competent to decide.”

Dr Storrar moved, and Dr Acland seconded, the previous question, which was carried.

Dr Corrigan required that the numbers of the majority and minority, and of those who did not vote, be entered on the minutes.

Majority, ...	8
Minority, ...	6
Declined to vote, ...	1

3. Moved by Dr Andrew Wood, seconded by Dr Embleton,—“That the Executive Committee be directed to take the opinion of counsel on the question, whether or not, in the case of an equality of votes upon a division, the President or Chairman of the Council for the time being is bound to decide the matter in hand by giving his casting vote.”—Agreed to.

4. Read, the following letter from the Catholic University of Ireland:—

“Catholic University of Ireland, 86 Stephen's Green,
“Dublin, May 2, 1864.

“SIR,—In reply to your letter of April 29th ult., I am directed by the Rector and Council of this University to say that they were not aware that the General Medical Council was in any way bound by Act of Parliament or otherwise not to recognise the examinations of other than chartered or incorporated educational bodies. Our University believed, and still believes, that your Council is at liberty to admit the preliminary examinations of any public body of recognised literary and scientific merit. That this University is known as a public body appears from the letter of your District Medical Council in Dublin, addressed to me as Secretary of the Catholic University; and the literary and scientific merit of this institution is, we respectfully submit, sufficiently clear from our Calendar, and from other public documents. The fact of our School of Medicine, as well as other Medical Schools in Dublin, although not chartered or incorporated institutions, being recognised by your Council, is, we again submit, sufficient proof that a charter or legal incorporation is not in every case required for recognition. Being aware that your Council possesses no coercive power for enforcing your regulations regarding general studies, the Rector and Council of this University were of opinion that they were acting in conformity with your wishes and with the Act of Parliament in offering their aid to carry out the enlightened views of the General Medical Council with respect to the general education of Catholic medical students, who now frequent the halls of this University.—I am, Sir, your obedient servant,

(Signed) THOMAS SCRATTON, Sec. Cath. Univ.

“The Registrar, General Council of Medical Education, 32 Soho Square, W.”

Moved by Dr Andrew Wood, seconded by Dr Storrar,—“That the Registrar be directed to inform the Catholic University of Ireland that they cannot acknowledge its entrance examination as long as it has no charter or incorporation.”—Agreed to.

5. Moved by Dr Corrigan, seconded by Dr Quain,—“That a communication be addressed to the Secretary of State for the Home Department, drawing his attention to the present defective state of the law regarding the practice of pharmacy, under which any person, however ignorant, may undertake it; and expressing the opinion of the General Medical Council that some legislative enactment is urgently called for to ensure competency in persons keeping open shops for dispensing medicines and for the compounding of physicians' and surgeons' prescriptions.”—Agreed to.

6. Moved by Dr Apjohn, seconded by Dr Corrigan,—“That the Army and Navy Medical Boards be requested to furnish the Medical Council annually with information on the following points:—*a.* The total number of candidates for Medical Commissions who have presented themselves for examination. *b.* The number of those who passed and of those who did not pass the examinations of such boards, distinguishing the number of successful and of unsuccessful candidates under the respective heads of the several licensing bodies mentioned in Schedule (A) to the Medical Act, and specifying their qualifications, Medical and Surgical, and whether they had failed in Medicine or Surgery. *c.* The general nature and scope of the examinations conducted by the said boards, together with a list of the questions proposed by the examiners.”—Agreed to.

7. Read the following letter:—

“*To the General Council of Medical Education and Registration.*

“Gentlemen,—Having lately read that it is the intention of the English Government to subscribe for 2000 copies of the *Medical Register*, and as it

appears that the Committee appointed to consider and report on the publication and distribution of the same has submitted a list of public officers and functionaries to whom the said *Register* should be supplied, I take the liberty of offering some remarks on the subject.

"The General Council is doubtless aware that a large number of English medical men are scattered throughout the globe, whose duties are almost entirely confined to practising on their own countrymen. The majority of these practitioners have received a regular English education; a minority have been educated in foreign schools. Some of the former, wishing to obey the spirit and letter of the English laws, have regularly registered; others have omitted to do so.

"At the present time certificates, etc., are accepted from all English medical men by her Majesty's Ministers and Consuls, without any consideration of their being registered or not, or of their possessing English medical degrees or otherwise. As a consequence of this equality, non-registered practitioners are placed on the same footing as those who have been registered, and who have received their education at a considerable cost and in a regular manner in England.

"I take the liberty of suggesting—1st, That the General Council take into consideration the advisability of calling the attention of her Majesty's Government to the justice of placing those medical men residing abroad who conform to the laws of their country on the same footing as medical men residing in the United Kingdom. 2d, That *Registers* be supplied to her Majesty's Ministers and Consuls for the furtherance of that object.

"In a pecuniary point of view, the registration of the non-registered practitioners residing abroad, and the supply of registers, would add considerably to the income of the General Council, and would, at the same time, be an act of justice to a large number of regularly-educated English physicians and surgeons.

"It would not be necessary to supply copies of the Register every year.

"Some difficulty might arise in carrying out these suggestions in the English colonies, where medical schools already exist; but this objection cannot hold good on the Continent, to which English visitors resort in great numbers.

"I have the honour to be, Gentlemen, your most obedient servant,

"12 Via della Mercede, Rome, July 1, 1863."

"JOHN GASON.

Moved by Dr Andrew Wood, seconded by Dr Embleton,—'That the Registrar be directed to write to Mr Gason, informing him that the Medical Council have no power to comply with his proposals.'—Agreed to.

8. Read, the following letter from the Royal National Life Boat Institution:

"14 John Street, Adelphi, London, 17th October 1863.

"Sir,—I am directed to transmit to you the accompanying circulars, copies of which this institution is now circulating amongst some members of the medical profession, with the view of eliciting their opinions on the relative merits of the plans of Dr Marshall Hall and Dr H. R. Silvester, for the restoration of the apparently dead from drowning. The Committee of the Royal National Life Boat Institution would feel much indebted to you if you would do them the favour to lay the same before the General Medical Council, with a view to their obliging the Society with their opinion on this very important subject.—I have the honour to be, Sir, your very obedient servant.

"Robert Bell, Esq."

(Signed) "RICHARD LEWIS, Secretary.

Moved by Dr Andrew Wood, seconded by Dr Embleton,—"That the Registrar be directed to write to the National Life Boat Institution, acknowledging their communication, and stating that the question proposed in it does not come within the sphere of the duties of the Council."

Agreed to.

9. Read, the following letter,—

“Parish of Bermondsey, Surrey,
“Vestry Offices, Maltby Street, S.E., October 27, 1863.

“Gentlemen,—I am directed by the Vestry of this parish to call your attention to the number of deaths which are registered in this district ‘uncertified,’ to apprise you that they have reason to believe that the persons who attend the cases during illness are unregistered and unqualified practitioners, and to express a hope that you will direct inquiry to be made into the circumstances, with the view of remedying such an unsatisfactory proceeding, and also of protecting the public against unqualified practitioners.—I am, Gentlemen, your most obedient servant,

(Signed) J. I. RICHES, Assistant-Clerk.

“To the Council of Medical Registration, Soho Square.”

Moved by Dr Andrew Wood, seconded by Dr Embleton,—“That the Registrar be requested to write to Mr J. I. Riches, and to state that the matter referred to in his letter to the Medical Council does not lie within the province of the Council.”—Agreed to.

10. The report of the Finance Committee (see page 1133) was considered.

Moved by Dr Sharpey, seconded by Dr Alderson,—“That the report of the Finance Committee be adopted.”—Agreed to.

Moved by Dr Sharpey, seconded by Dr Alderson,—“That £50 be presented to Dr Garrod, in acknowledgment of special services rendered in the publication of the *Pharmacopœia*, at the request of the Executive Committee.”—Agreed to.

Moved by Dr Sharpey, seconded by Dr Alderson, “That gratuities be given, of £30 to Mr Bell, and £20 to Mr Roope, the clerks, for extra trouble and efficient service in conducting the sale of the *Pharmacopœia*.”—Agreed to.

Moved by Dr Sharpey, seconded by Dr Alderson,—“That Messrs Spottiswoode’s extra claim of £75 be allowed and paid.”—Agreed to.

Moved by Dr Sharpey, seconded by Dr Alderson,—“That two members of the Executive Committee be annually appointed to audit the accounts of the Council.”—Agreed to.

11. Moved by Dr Andrew Wood, seconded by Dr Embleton,—“That the Council now proceed further to consider the report of the Select Committee on Education.”

Amendment moved by Dr Acland, seconded by Dr Stokes,—“That in the absence of the chairman of the Education Committee (Dr Christison), of the representative of the University of Edinburgh (Mr Syme), of the representative of the University of Cambridge (Dr Paget), and at the twelfth day of the session of the Council, it is inexpedient to enter upon the consideration of the details of professional study and examination; but instead thereof, That a committee be appointed to draw up and report to the Council of 1865 what are the subjects of examination which should be required of all students prior to their prescribed course of professional study; That a committee be appointed to draw up in detail a scheme of the scientific and professional subjects of which knowledge should, in the judgment of the Medical Council, be required from every person before he receives a diploma or qualification testifying that he possesses the requisite knowledge and skill for the efficient practice of his profession; and that the Committee report at the next meeting of the Medical Council; That a committee be appointed to report in detail at the commencement of the next Session of Council, as to the best mode of organizing an efficient inspection of all examinations conducted by the several Licensing Bodies, in conformity with Sect. XVIII. of the Medical Act; That the committees (if appointed) be requested to correspond with each other, to obtain information from such persons unconnected with the Council as they may see fit, and to prepare in type, in such form as may be agreed on with the Registrar, their respective reports, if possible, before Easter of 1865, or at an earlier period if required by the President.”

The amendment was negatived.

Dr Andrew Wood required that the numbers for and against the amendment be entered on the minutes,—

Majority, ... 8
Minority, ... 4

The motion having been put to the vote, was also negatived.

12. Moved by Dr Andrew Wood, seconded by Dr A. Smith,—“That the various letters from the bodies mentioned in Schedule (A) of the Medical Act, explanatory of their regulations, which have already been printed in proof, be laid on the table of the Council, and entered on the minutes.”—Agreed to.

13. Dr Embleton presented the report of the Committee on the returns from the licensing bodies:—

REPORT.

The Council having directed that the table of returns under the 23d recommendation of the Council, viz., “That returns from the Licensing Bodies in Schedule (A) be made annually on the 1st of January, and in the subjoined form, to the General Medical Council, stating the number and names of the candidates who have passed their first as well as their second examinations, and the number of those who have been rejected at the first and second examinations respectively; and that the Registrar forward a sufficient number of forms, with a notice for their being returned, in due time,” shall be the only table at present prepared by the Committee on account of the revision and alteration of the recommendations of the Council on Medical Education, your Committee beg to lay that table, with an explanatory note appended, before the Council.

D. EMBLETON, *Chairman.*

Table of Returns under Recommendation 23.

LICENSING BODIES.	PASSED.		REJECTED.	
	First Examin. Number.	Second Examin. Number.	First Examin. Number.	Second Examin. Number.
Royal College of Physicians, London .	76	74	17	30
Royal College of Physicians, Edinburgh	151	146	22	14
King's & Queen's Col. of Phys., Ireland	...	66	...	17
Royal College of Surgeons, England .	465	495	128	55
Royal College of Surgeons, Edinburgh	142	121	34	11
Faculty of Phys. & Surgeons, Glasgow	17	76	2	25
Royal College of Surgeons, Ireland	138	138	36	36
Society of Apothecaries, London . .	323	305	34	8
Apothecaries' Hall, Dublin	23	20	5	3
University of Oxford	3	...	1	...
" Cambridge	4	5	...	...
" Durham	...	...	...	...
" ¹ London	21	24	16	...
" Edinburgh	(1st) 67	...	(1st) 32	...
	(2d) 82	(3d) 82	(2d) 6	(3d) 2
" Aberdeen	(1st) 39	...	(1st) 3	...
	(2d) 37	(3d) 32	(2d) 11	(3d) 9
" Glasgow	59	70	12	8
" St Andrews	10	...	1	...
" Dublin	12	37	2	8
Queen's University, Ireland . . .	42	26	13	8
Totals	1708	1687	375	224

¹ By the "Regulations of the University of London (see Calendar, 1864, p. 106) the first examination for the degree of M.B. includes four subjects, viz., Anatomy, Physiology,

Moved by Mr Arnott, seconded by Mr Cooper,—“That the Report be received and entered on the minutes.”—Agreed to.

14. Dr Embleton presented the Report of the Committee appointed to revise the standing orders.

REPORT.

The Committee on the Standing Orders and Regulations having arranged and numbered them, beg to lay them before the Council, and recommend that they be printed.

An alteration has been made in the “Scale of Travelling Expenses,” substituting for Leeds, £4, 4s., and Worcester, £4, 4s., the following,—Cheltenham, £4, 4s., Southampton, £2, 2s.

D. EMBLETON, *Chairman*.

Moved by Dr Embleton, seconded by Dr Apjohn,—“That the Report of the Committee on the Standing Orders be received and adopted.”—Agreed to.

15. Moved by Dr A. Smith, and seconded by Dr Corrigan,—“That the decision on the resolution moved by Dr Smith, and seconded by Dr Corrigan, in the early part of this day, was informal, inasmuch as ‘the previous question’ was put without the amendments on such resolution being permitted to be considered.”

The motion was negatived.

16. Moved by Dr Sharpey, seconded by Dr Aquilla Smith,—“That the Pharmacopœia Committee be authorized to draw on the treasurers, to an extent not exceeding £100, for expenses which may be incurred in carrying out the objects of its appointment.”—Agreed to.

17. Moved by Dr Sharpey, seconded by Dr Storrar,—“That the cordial thanks of the Council be tendered to Dr Hawkins, for the unremitting care and attention he has bestowed on the business of the Council for the five years he has discharged the duties of Secretary; and that £105 be now presented to him in acknowledgment of the sense which the Council entertains of his valuable services.”—Agreed to.

18. Moved by Dr Acland, seconded by Dr Andrew Wood,—“That the Report of the Select Committee on Education be forwarded to the various bodies in Schedule (A), with a letter from the Registrar, to the effect that the Report is under the consideration of the Council, and calling their attention to the suggestions of the Report, and soliciting their observations thereon; also, distinguishing the resolutions which have been adopted by the Council from those which have not yet been considered; and that it be referred to the Executive Committee to carry this resolution into effect.”—Agreed to.

19. Moved by Dr Smith, seconded by Dr Andrew Wood,—“That the standing order as to the hour of adjournment be suspended.”—Agreed to.

20. Moved by Dr Andrew Wood, and seconded by Dr A. Smith,—“That the powers and duties delegated to the Executive Committee, in accordance with Section IX. of the Medical Act, shall be vested in the Committee until the next meeting of the General Medical Council.”

21. Moved by Dr Andrew Wood, seconded by Dr Aquilla Smith,—“That the thanks of the Council are due, and are hereby tendered, to the Treasurers, Dr Sharpey and Dr Quain, for their important services.”—Agreed to.

22. Moved by Dr Andrew Wood, seconded by Dr Aquilla Smith,—“That the thanks of this Council are eminently due, and are hereby offered, to the Royal College of Physicians, London, for their obliging and courteous accommodation during the present session of the Medical Council.”—Agreed to.

23. Moved by Dr Andrew Wood, seconded by Dr Aquilla Smith,—“That

Materia Medica, and *Pharmaceutical Chemistry*, and *Organic Chemistry*; but candidates for this examination are permitted to defer the subject of *Physiology* to a following year.

The list headed “*Entire*” contains the names of those undergraduates who elected to pass the examination in all four subjects at once in 1863.

That headed “*Excluding Physiology*” contains the names of those who elected to be examined in three subjects in 1863, and to defer the fourth, viz., *Physiology*, to a future year.

That headed “*Physiology only*” contains the names of those who, having elected to pass in a former year in three subjects, passed in 1863 in *Physiology*.

a gratuity of fifteen guineas be given to the resident officials of the College of Physicians for services rendered to the Council."—Agreed to.

24. Moved by Dr A. Smith, seconded by Dr Andrew Wood,—“That a gratuity of ten guineas be given to Mr Bell, and the same to Mr Roope, the clerks, in consideration of their extra services during the present lengthened session of the General Medical Council.”—Agreed to.

25. Moved by Dr Andrew Wood, seconded by Mr Arnott,—“That the thanks of the Council be cordially tendered to the President for his kind, courteous, and efficient services during the present session of the General Medical Council.”—Agreed to.

ARMY MEDICAL DEPARTMENT.

THE following Memorial regarding the state of the Medical Department of the Army has been forwarded to Lord Palmerston by the Royal College of Physicians of Edinburgh :—

To the Right Honourable Viscount PALMERSTON, First Lord of Her Majesty's Treasury, the MEMORIAL of THE ROYAL COLLEGE of PHYSICIANS of EDINBURGH,

Humbly sheweth.—That the Royal College of Physicians are charged with the licensing of Medical Practitioners, and are therefore bound to watch over the interests of the Medical Profession and of the public.

That the attention of the College has been frequently drawn to the very unsatisfactory condition of the Medical Department of the Army; and that the evils often complained of have now become so aggravated, that they consider themselves called upon, in the public interest, to bring the subject directly under your Lordship's notice. Your Memorialists would therefore beg respectfully to lay before your Lordship the following statement of facts :—

Previous to 1854, public attention had not been specially directed to the Medical Department of the Army; and though the Officers of that Department considered that they laboured under various hardships, a sufficient supply of Medical men for the wants of the service could always be obtained. On the outbreak of the Crimean war, it was soon discovered that there was a great deficiency of Medical Officers; and this deficiency was subsequently the cause of a great amount of suffering among the troops. As it was found impossible to obtain a sufficient supply of regular Assistant Surgeons, passed according to the requirements of the Army Medical Board, a number of civilians were engaged as Acting Assistant Surgeons, to perform the duties of Commissioned Assistant Surgeons. Notwithstanding, the Medical Department of the Army confessedly broke down, in consequence, not of the inefficiency of the Officers, but of the smallness of their number.

In 1856, a Select Committee of the House of Commons considered the whole subject, and recommended in their Report, that the pay of Assistant Surgeons should be increased, and that means should be taken to make it unnecessary, in future, to have recourse to Civil Assistants.

In 1857, a Royal Warrant was issued, which raised the pay of Assistant Surgeons to ten shillings per day.

In 1858, a new Royal Warrant for the Medical Department of the Army appeared, which was justly regarded as a great boon by the Officers of that service. Among other important concessions, it was ordered that Medical Officers should have a certain rank relative to Combatant Officers, and that this rank should carry with it all precedence and advantages, with the single exception, that the Presidency of Courts-Martial should always be held by Combatant Officers. The result of these concessions was, that an abundant supply of eligible candidates presented themselves, so that the authorities were enabled to raise the standard of examination and of qualification.

Complaints, however, were soon made, that the warrant of 1858 was not fully carried out, and especially that the regulation with regard to relative rank was systematically violated.

On the 28th of March 1861, a new warrant was issued, ordering that Assistant Surgeons, promoted after that date, should rank with Majors, but junior of that rank; this order being in direct contravention of the warrant of 1858, which directed that Medical and Combatant Officers should rank according to the date of their commissions. At the same time, a reduction in the number of Assistant Surgeons was made, whereby additional duties were thrown upon the rest, and it became very difficult for them to obtain leave of absence.

In 1862, an order was issued, that Staff and Regimental Surgeons should, in their Annual Reports, answer a variety of questions with respect to the Assistant Surgeons who had served under them during any part of the preceding year. Some of these questions were of such a nature, that one gentleman should not be called upon to answer them in regard to another. Thus, the Surgeon was required to state the character of his Assistant Surgeon as to sobriety, correctness of general conduct, temper, and similar points. This was felt degrading to the character of Staff and Regimental Surgeons, as constituting them spies upon their juniors, whereby suspicion and distrust were necessarily engendered.

In March 1863, a new warrant was issued, which restored, though not in its full integrity, the relative rank conceded by the warrant of 1858.

The effect of the changes which have been introduced since 1858 has been deplorable. Many Medical Officers have resigned, and it has been found impossible to supply their place. For some time past the number of Candidates at the competitive examinations has been much below the number of vacancies; and of these Candidates a large proportion have been found grossly ignorant, and have been rejected, which clearly indicates that the Army is unpopular among that class of Medical men, whose services it would be for the interest of the department to secure. So difficult has it been to procure candidates, that the limit of age of entrance has been raised from twenty-five to thirty; and that lately the Director-General has advertised for acting Assistant Surgeons, who are eligible up to the age of forty years, and who are to take the place on home service of Commissioned Assistant Surgeons.

Your Memorialists, viewing with great anxiety this very unsatisfactory state of an important branch of Her Majesty's service, would beg respectfully to urge upon your Lordship the necessity for a reform of the following grievances, to which Military Medical Officers are subject :

First, in consequence of vacancies not having been filled up, promotion has become so slow that no Assistant Surgeon now entering the service can expect to become a Surgeon in less than fifteen years.

Second, in consequence of the deficient number of Medical Officers in the Army, it is with great difficulty that leave of absence can be obtained.

Third, in consequence of the appointment for home service of Acting Assistant Surgeons, the Commissioned Assistant Surgeons will be almost exclusively employed on foreign service, and will be deprived of their proper turn of serving in this country.

Fourth, the system of confidential reports, of an inquisitorial character, is felt as a degradation, both by those who are required to draw them up, and by those to whose conduct they refer.

Fifth, Medical Officers are required to superintend the branding of deserters, and are thereby placed in a position which no professional gentleman should be called upon to occupy.

In name and by authority of the College,

JOHN GRAHAM MACDONALD BURT, *President.*

Edinburgh, 12th May 1864.

PUBLICATIONS RECEIVED.

- A Voice from Derby to Bedlam. London, 1864.
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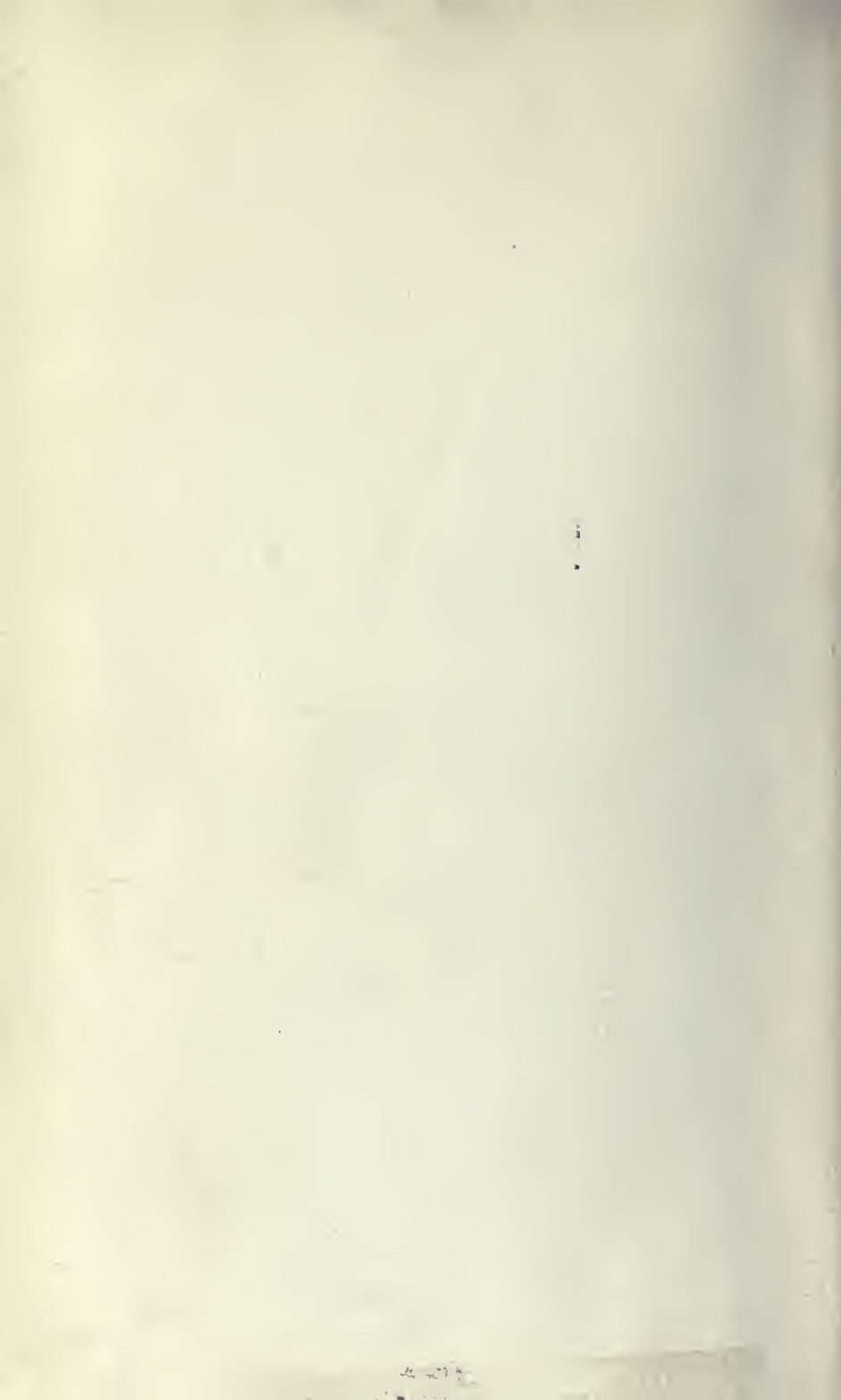
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